# The Effects of Ethnic Enclaves on Immigrant Employment Patterns and Earnings Assimilation in Major Canadian Cities

by

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# 1 Introduction

Canadian immigration policy has changed significantly since the late 1960s and today seeks to target immigrants who are believed to be suitable to Canadian society and that offer valuable skills to the Canadian labour market. Despite this, numerous studies have documented an ongoing decline in immigrant labour market outcomes that began in the 1970s. While many studies have examined and theorized on the causes of this decline, a full explanation is still lacking. A recent stream of economic research has sought to examine the impact that the spatial settlement of recent immigrants has had on economic outcomes, particularly the effect of ethnic enclaves on earnings and earnings growth.

This paper will continue this line of research by reformulating a classic approach to estimating immigrant earnings functions using measures of immigrant concentration at the neighbourhood-level to examine the effect of local immigrant enclaves economic outcomes. Further regressions will be estimate to examine the impact of local enclaves on the likelihood of being employed and the likelihood of being in the labour force.

The conclusions reached ultimately support the previous research in this field by finding that the greater the concentration of an immigrant's own ethnic group in a neighbourhood, the lower an immigrant's earnings will be, all else equal. This can be supported by the explanation that, if an immigrant is isolated with his/her own immigrant ethnic group, they are less likely to learn the skills and language necessary to succeed in the Canadian labour market. Previous research has typically suggested that immigrants who stay in the enclaves longer are made worse off, but the findings in this paper suggest that additional years in an enclave do not further harm an immigrant's earnings.

While the results for earnings regressions provide the results that were generally anticipated, the probit regressions used to examine the likelihood of being employed and in the labour force do not provide conclusive results. The series of regressions seem to suggest that residence in more ethnically concentrated areas does not impact ones ability to find employment, nor does it significantly impact one's willingness or desire to work.

## 2 Literature Review

Since Canada's beginnings, immigration has played a fundamental role in the country's development. Traditionally, it was a tool for establishing a vast country and building a relatively homogeneous population of Western European immigrants. Then a gradual transition saw the aim of immigration change to one of reuniting families and achieving other humanitarian causes. In the last 30 years, however, the government's policy has evolved further to put greater emphasis on the economics of immigration, fostering a set of policies aimed at attracting educated and skilled workers to augment the Canadian-born labour force (Bloom and Gunderson 1991).

Despite the government's economic objectives, a broad literature has emerged documenting a decline in the labour market outcomes for successive cohorts of immigrants since the 1970s in Canada and the United States.[1] This body of literature originates from the classic Chiswick (1978) study. In his study, Chiswick outlined his theory explaining how immigrant earnings are affected by the number of years since migration. He argued that immigrants initially earn less than their native-born counterparts, but with time the earnings gap declines. Figure 1 depicts the relationship found by Chiswick. Chiswick argued that since labour market earnings are directly related to productivity, all else equal, immigrant earnings will initially be lower than those of their native-born counterpart as labour market skills are not perfectly mobile between source and host countries. Many of the skills or knowledge gained in the source country may not be viewed positively or even adequately understood by domestic employers.

As time passes, however, immigrants will gain relevant job training, improve their language skills, and may pursue further education. These gains will narrow the earnings gap between the foreign-born (fb) and the native-born (nb). As can be seen in Figure 1, the shape of the years since migration (YSM) profile is concave and quadratic reflecting the fact that initial immigrant earnings increase dramatically as they gain familiarity with the domestic labour market and acquire suitable skills. Immigrant earnings continue to increase, though at a slower rate, as they continue to gain further domestic work experience and relevant skills (i.e., language, education, etc.) (Abbott and

[1] For Canada see: Bloom and Gunderson 1991; Baker and Benjamin 1994; Bloom, Grenier, and Gunderson 1995; Warman and Worswick 2004; Frenette and Morissette 2003; Picot and Hou 2003; Ayedmir and Skuterud 2005; Picot and Sweetman 2005; and Reitz 2007a,b. For the U.S. see: Borjas 1995a, and 1999.

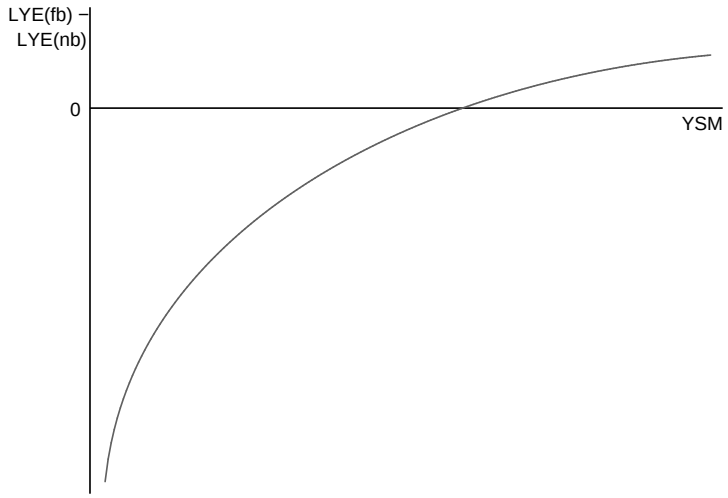


Figure 1: Years Since Migration (YSM) Profiles for Foreign-born Men
Source: Abbott and Beach (1993)

Beach 1993). Chiswick (1978) suggests that that the initial earnings gap and subsequent shape of the YSM profile is dependent on how similar the domestic and source countries are.

As immigrant earnings continue to rise relative to the native-born, it is possible that immigrant earnings will reach or potentially exceed those of the native-born, all else being equal. Traditional economic theory suggests that migration offers the greatest economic benefits to those who are the most able and motivated (Chiswick 1978). Therefore, if immigrants are self-selected in such a manner, then it is possible, though not necessary, that their earnings could exceed those of the native-born.

While Chiswick (1978) focused only on male immigrants, a number of further studies have examined female immigrants in a similar context, but with very different results.[2] Citing Mincer and Polachek (1974), Long (1980) argues that the specification used by Chiswick (1978) for men is not appropriate for women as women typically leave the labour force for periods of time to raise children. Rather, a "family investment strategy" better describes the employment patterns of immigrant women. Upon arrival, immigrant wives will typically find immediate low-status

[2]For Canada see: Beach and Worswick 1993; and Baker and Benjamin 1997. For the U.S. see: Long 1980; MacPherson and Stewart 1989; and Duleep and Sanders 1993.

employment in order to subsidize their husbands' investment in human capital. That is, the wife will initially support the family while the husband gains language and occupational skills that will make him more competitive (and productive) in the domestic labour market (Long 1980, Duleep and Sanders 1993, Beach and Worswick 1993).

Given the different employment pattern observed in immigrant women, we also observe a different YSM profile for immigrant women; see Figure 2. While immigrant women also enter the Canadian labour market with a relative earnings disadvantage, this disadvantage is not as significant as it is for men. The YSM profile, however, is much flatter for women and as a result we observe a permanent earnings disadvantage for immigrant women relative to their native-born counterparts (Beach and Worswick 1993).

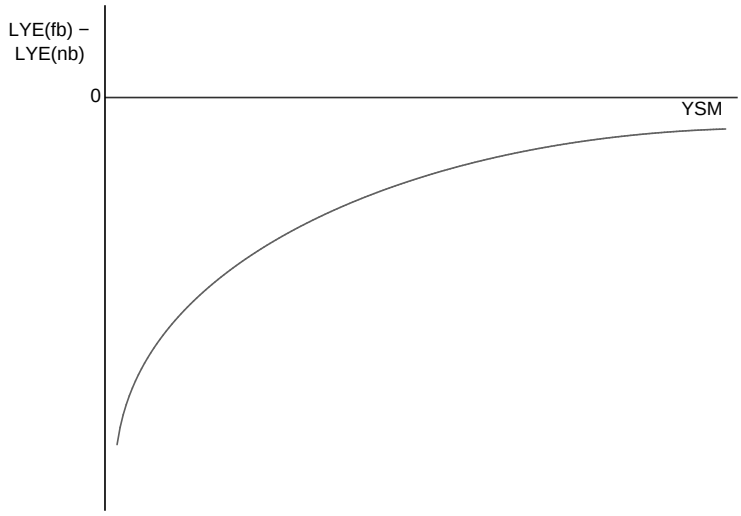


Figure 2: Years Since Migration (YSM) Profiles for Foreign-born Women
Source: Beach and Worswick (1993)

Successive studies, as given previously, have suggested a decline in the labour market outcomes of successive cohorts of immigrants. Since the 1970s, the initial earnings gap has increased and a flatter YSM profile has increased the number of years to reach the crossover point, if it is ever to be reached. Diagrammatically, this decline is depicted in Figure 3.

Early studies observed that immigrants to Canada in the early 1970s entered the labour force with an initial earnings disadvantage but would see their earnings converge to those of the native-

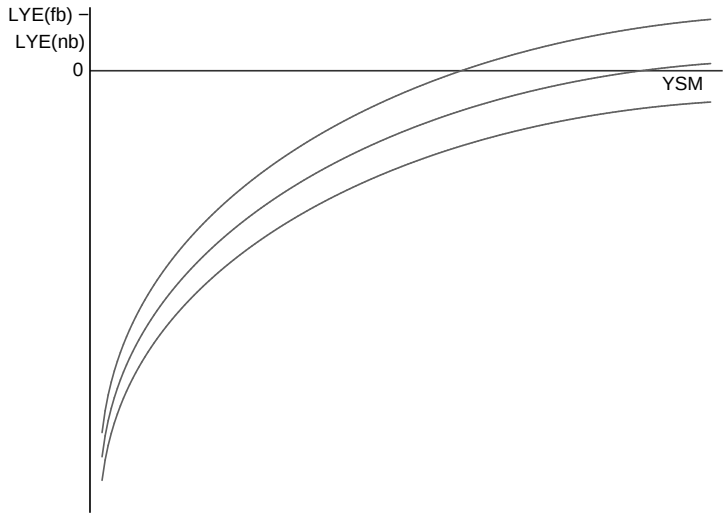


Figure 3: Years Since Migration (YSM) Profiles for the Foreign-born Men, 1970-2000
Source: Abbott and Beach (1993), Frenette and Morissette (2003)

born within 6 to 14 years (Meng 1987, Warman and Worswick 2004). Successive studies covering later cohorts, however, found that the initial earnings disadvantage increased throughout the 1980s and early 1990s leading to much longer convergence times. Baker and Benjamin (1994) suggested that if immigrant earnings growth rates were similar between cohorts, then it is likely that more recent cohorts will not see their wages converge to those of the native-born. Cohorts arriving in the late 1990s did experience a slight improvement in their initial earnings disadvantage, but the overall downward trend has remained (Frenette and Morissette 2003). In sum, the literature is in general agreement that since the 1970s, successive immigrant cohorts have faced increasingly lower relative entry earnings making convergence with native-born earnings increasingly unlikely. This has also lead to decreased rates of home ownership (Haan 2005), and increased low-income and poverty rates amongst Canadian immigrants (Kazemipur and Halli 2000, Picot and Hou 2003).

## 2.1 Immigrant Adjustment Process

In light of this observed deterioration in relative entry earnings, numerous studies have attempted to explain it as well as the immigrant adjustment process. Despite these studies, it remains unclear what is driving this decline. The most common argument is that the decline is being driven by the

change in the composition of source countries. Until the late 1960s, the Canadian government's policies favoured immigrants from Western Europe and the United States. But at this time the government moved to a merit-based system and eliminated country quotas. The merit-based system, or points system, allocated points based on immigrant attributes that were viewed as favourable to the Canadian economy and society. Since this time, the share of immigrants from Western Europe and the United States has declined to less than 20 percent, while the share of immigrants from Africa, the Middle East, and Asia has risen to nearly 70 percent.[3]

Despite the dramatic shift in source country composition, it was expected that the government's targeting of individuals with specific skill sets that were in demand would lead to greater economic benefits (Green and Green 2004). However, in many empirical studies this change in source country composition has been found to be the primary cause driving the decline in immigrant earnings. Baker and Benjamin (1994) found that the change in source countries accounted for 30 to 50 percent of the observed decline in immigrant entry earnings during 1980s. Similarly, Bloom, Grenier, and Gunderson (1995) found that the initial earnings disadvantage was particularly severe for immigrants from Asia, Africa, and Latin America in comparison to immigrants from Europe and the United States. In a more recent study, Aydemir and Skuterud (2005) found that one-third of the deterioration in entry earnings could be explained by the changes in source countries and language abilities. Picot and Sweetman (2005) suggest that the human capital of immigrants from these non-traditional source countries may be less transferable due to "potential issues regarding language, cultural differences, educational quality, and possibly discrimination."

Picot and Sweetman (2005) make a broader statement that the change in the source country composition embodies many differences between earlier cohorts and the more recent groups. One of the more significant changes is the language abilities of the more recent immigrant cohorts. Fewer of today's immigrants speak either English or French as a mother tongue or as a home language, and the languages that are being brought over from non-traditional source countries tend to be linguistically more distant to English than are the Romance and Germanic languages of Western Europe. This linguistic distance makes official language acquisition more difficult for recent

[3]Source: Facts and Figures 2006, Immigration Overview, Permanent and Temporary Residents http://www.cic.gc.ca/english/resources/statistics/facts2006/permanent/09.asp

immigrants (Chiswick and Miller 2001, 2004). Since language and communication skills directly affect worker productivity, Picot and Sweetman (2005) suggest that we should expect to see lower earnings amongst more recent cohorts given the greater difficulty associated with learning one of Canada's official languages. Also, as the economy evolves naturally from a manufacturing-based economy to a more service-oriented economy, language becomes increasingly important.

It has also been suggested that the deterioration in immigrant economic outcomes may have arisen as a result of greater labour force discrimination since more recent immigrants from the non-traditional source countries are more likely to be visible minorities (Bloom, Grenier, and Gunderson 1995). In examining wage differences for visible minorities in Canada, Hum and Simpson (1999) observe that, with the exception Canadian-born Blacks, only foreign-born visible minorities face wage discrimination. As it is possible that this result may have been driven by immigrant language ability, the authors test for this and find that the difference cannot be explained by language. Hum and Simpson ultimately find evidence suggesting discrimination, and suggest that, since the proportion of immigrants who are visible minorities has grown considerably since the 1970s, this may in part explain the continued deterioration in immigrant entry earnings.[4]

Further research has focused on the level of education and educational quality citing it as a possible explanation for the deterioration that has been attributed to changes in the source country composition. Since the 1970s the level of education amongst immigrants has increased, and between 1980 and 2000 the proportion of immigrants with a degree even doubled (Hou and Picot 2003). While the returns to foreign education are less than the returns to Canadian education (McBride and Sweetman 2003), the returns have remained fairly stable over the period under study (Ferrer and Riddell 2002, Aydemir and Skuterud 2005). Ferrer and Riddell (2002) also find that having a degree provides similar returns for both the foreign- and native-born. Having not observed a decline in the returns to education, McBride and Sweetman (2003) looked at the issue of educational quality using international test score surveys and find evidence that the returns to education are lower for those immigrants educated before entry in countries with lower educational quality.

McBride and Sweetman (2003) observe that the returns to education are higher for those immi-

[4]The proportion of the 1996-2000 immigrant cohort that remained in Canada for the 2001 Census that identified themselves as a visible minority was 73 percent. Source: Statistics Canada, POublic-use Census Micro Data Files.

grants who complete their studies in Canada as opposed to the source countries. And similarly, De Silva (1997) and Schaafsma and Sweetman (2001) find that age at immigration is an important determinant for an immigrant's economic integration as younger immigrants will be able to complete a greater share of their education and work experience in Canada. These findings are consistent with the U.S. findings by Borjas (1995b).

While the returns to foreign education have remained relatively stable, the returns to foreign work experience have not. Foreign work experience has always been discounted relative to Canadian work experience; however, since the 1970s the degree to which foreign work experience has been discounted has increased (Green and Worswick 2004, Frenette and Morrissette 2003, Aydemir and Skuterud 2005). Aydemir and Skuterud (2005) observe a larger decline for immigrants from non-traditional source countries that effectively eliminates the value of foreign work experience, and Green and Worswick (2002) find that the general decline affected both family class and economic class immigrants. In looking for an explanation why this decline has taken place, Picot and Sweetman (2005) suggest that this decline may be the result of the rapid technological change, which makes foreign work experience in non-traditional source countries with out-dated technology (by Canadian standards) relatively worthless.

A number of studies have also suggested that underlying macroeconomic conditions may have driven the deterioration in entry earnings that was observed during the 1980s and 90s.[5] Bloom and Gunderson (1991) and McDonald and Worswick (1998) suggest that the changes in immigrant earnings can be explained by the changing economic conditions which are affecting all labour market participants. And while all labour market participants are being affected, McDonald and Worswick (1998) find that immigrant earnings are more affected by changes in economic conditions than their native-born counterparts. That is, the relative earnings of immigrants improve during expansions and contract during recessions. Furthermore, in studying participation and employment rates, Aydemir (2002) found that 50 percent of the decline in immigrant participation rates during the early 1990s could be explained by macroeconomic conditions. While there is evidence to suggest that macroeconomic conditions affect immigrant earnings and participation rates, Aydemir (2003)

[5] Bloom and Gunderson 1991; Bloom, Grenier and Gunderson 1995; McDonald and Worswick 1998; Aydemir 2002, 2003; and Green and Worswick 2002.

observes that the downward trend in immigrant earnings is present throughout the various business cycles from 1980 onwards and thus business cycles cannot fully explain the deterioration in entry earnings.

Reitz (2001) argues, however, that the changes in the labour market may be having a more significant effect on immigrant earnings than general macroeconomic conditions. He observes that employment rates in the early 1980s were higher for immigrants and that they have now converged to those of the Canadian-born. More recent immigrants have come into increasing competition with the Canadian-born in a tight labour market. In studying the Canadian labour market, Picot and Heisz (2000) and Beaudry and Green (2000) found that there was a general decline in entry earnings for all recent labour force entrants. Picot and Heisz (2000) and Green and Worswick (2004) found that both recent immigrants and young, Canadian-born males faced similar declines, which may have accounted for up to 40 percent of the decline in entry earnings for immigrants. Picot and Hou (2003) suggest that the impact of the poor labour market outcomes was particular severe for the more highly educated, and especially for educated women.

### 2.2 Spatial Settlement Patterns

A more recent stream of economic research has examined the spatial settlement patterns of immigrant groups. While ethnic communities have long existed in Canada and the United States, recent work has observed that they are growing more pronounced and more concentrated, culturally and linguistically (Bloom, Grenier, and Gunderson 1995). Some sociologists have argued that these ethnic enclaves provide recently arrived immigrants with a basic social structure to help establish themselves in the host country. Tilly (1990) suggests that ethnic networks allow for greater risk dispersion and better information sharing amongst arrivals. Furthermore, Wilson and Portes (1980) and McManus (1990) argue that ethnic enclaves and their ethnic economies allow new immigrants to gain beneficial work experience and wages that would otherwise not be available to them. Finally, Nee et al. (1994) and Light and Gold (2000) suggest that ethnic enclaves allow recent arrivals to quickly develop social networks and an understanding of the domestic labour market which helps them to find better work more quickly.

While there may likely be many benefits to ethnic enclaves, economists have generally found them to be detrimental to an immigrant's long run assimilation. Bloom, Grenier, and Gunderson (1995) suggest that living and working in an enclave may put less pressure on immigrants to develop the skills and language necessary to benefit them in the larger domestic economy. Chiswick and Miller (2001, 2002) found that immigrants residing in an ethnic enclave were less likely to acquire an official language and suggest that the benefits to learning an official language may be limited when working in an ethnic (or linguistic) enclave (Chiswick and Miller 2008). In examining earnings, Warman (2007) found a negative relationship between ethnic segregation and earnings growth for both males and females and that this relationship was particularly severe for educated immigrants. Borjas (2000) has similar findings for immigrants in the United States. In studying immigrants in England and Wales who reside in ethnically concentrated areas, Clark and Drinkwater (2002) observed higher unemployment rates and lower rates of self-employment. While Borjas (1986) found higher incidences of immigrant self-employment in more ethnically concentrated areas of the United States, Razin and Langlois (1996) do not find such evidence for Canada.

It has been noted that the increasing concentration of immigrant groups in Canada's major cities is being driven by the increasing proportion of immigrants who are choosing to settle in the country's major cities (Hou 2004). Nearly 70 percent of recent immigrants to Canada have chosen to settle in the country's three largest CMAs.[6] In a study of these cities, Murdie (2008) describes a common pattern taking place amongst immigrants which is causing concern. Earlier cohorts chose to settle in the relatively inexpensive downtown neighbourhoods which led to varying degrees of revitalization and growth of ethnic economies. As the revitalization continued, property values slowly increased and many immigrants chose to take advantage of the increased equity by relocating to the suburbs. More recent immigrants, however, are no longer able to afford the downtown neighbourhoods which are being renewed and rebuilt, and choose instead to settle where their ethnic group has already located (i.e., into suburban ethnic enclaves) or to the less expensive inner suburbs where many recent immigrant groups have formed poorer enclaves. Murdie cites this

[6]Of recent immigrants (2001-2006), 40 percent chose to settle in Toronto, 15 percent in Montreal, and 14 percent in Vancouver. Of the 1965-1971 cohort, 24 percent chose to settle in Toronto, 10 percent in Montreal, and 6 percent in Vancouver. Source: Murdie (2008).

as a concern as the more recent immigrant groups are growing increasingly isolated from the larger English-dominated society and economy, thus lessening their chances of becoming accustomed to the official languages, Canadian culture, and the larger domestic economy and labour force.

Further concern relates to the increasing housing costs in the three major cities more generally. Statistics Canada introduced the Longitudinal Survey of Immigrants to Canada (LSIC) in 2001, which was a survey of recent immigrants on a variety of topics relating to their initial settlement and integration in Canada. In 2005, Statistics Canada released figures pointing to severe problems with immigrant housing. Shortly after arrival nearly 80 percent of immigrants lived in rental accommodations, and more than half these immigrants reported that they spend more than 50 percent of their family income on housing, and a further 20 percent of respondents reported that they spent 30 to 50 percent of their family income on housing. Vacancy rates have also fallen to the lowest levels since 1987 in Canada's major CMAs and rents are the highest in the country.

A number of studies have also observed increasingly concentrated ethnic enclaves in conjunction with changing low-income and poverty rates (Hou 2004). Picot and Hou (2003) found that the increasing low-income rates in Canada's three largest CMAs was entirely driven by immigrants. Ornstein (2000) similarly observed high poverty rates for visible minorities in Toronto, who were largely immigrants from non-traditional countries. Interestingly, Bernard (2008) found that immigrants from non-traditional source countries were less likely to see earnings assimilation in large CMAs, but does observe greater success for those immigrants choosing to settle in smaller urban centres and rural areas. He argues that educated and uneducated immigrants can better compete for jobs in rural areas and adopt language, culture, and skills more quickly than their counterparts in larger more ethnically concentrated areas in the cities.

While it is clear that there is not one cause alone that has led to the deterioration of immigrant economic outcomes since the 1970s, it is likely that the shift of immigrant communities from the downtown centers to the suburbs of the largest cities has likely contributed.

# 3 Data and Estimation Sample

## 3.1 Census Data

In order to carry out this study, Census data is required as it provides a sufficiently large sample size of both native-born Canadians and immigrants. A large sample size is necessary, as the study is considering only the three largest census metropolitan areas (CMAs) and it is incorporating a census tract (CT)-level variable into the traditional earnings and "family investment strategy" models. Statistics Canada defines census tracts as small geographic areas within larger census metropolitan areas or census agglomerations with populations ranging between 2,500 and 8,000 individuals.[7]

The public use micro data Census files provide a smaller 1-in-50 sample and only grouped data down to the CMA-level, making its use infeasible for this exercise. For this reason, the 2001 1-in-5 Canadian Census micro data master file will be used as it provides both the necessarily large sample and ungrouped micro data. While an additional Census would have been preferable in order to provide comparisons across time, no Census data earlier than 1996 is made locally available by Statistics Canada, thus limiting the scope of this study.[8]

While the 2001 Census does provide a sufficiently large sample size and an appropriate level of aggregation, it does have one serious shortcoming. The Census does not provide a work experience variable. While some studies have opted to use the Mincer identity, equation (1), it has been shown, however, that this approximation leads to biased results (Meng 1987) and is not appropriate for women (Mincer and Polachek 1974, Blinder 1976). It is especially problematic when including age and education into a regression equation.

$$\text{Potential Experience} = \text{Age} - \text{Years of Schooling} - 5 \tag{1}$$

[7] Census tracts (CTs) are small, relatively stable geographic areas that usually have a population of 2,500 to 8,000. They are located in census metropolitan areas and in census agglomerations with an urban core population of 50,000 or more in the previous census. The CT should be as homogeneous as possible in terms of socio-economic characteristics, such as similar economic status and social living conditions at the time of its creation. The CTs shape should be as compact as possible and its boundaries must follow permanent and easily recognizable physical features. Source: Statistics Canada, 2001 Census Dictionary.

[8] Access to Canadian Census micro data master files is restricted to Statistics Canada premises and only a selection of the surveys are made available at the Statistics Canada Regional Data Centres.

### 3.2 Estimation Sample

The general sample to be used in this study will consist of both males and females between the ages of 25 and 54. Most studies opt for this or a similar age bracket as it avoids the 18 to 25 age bracket which will contain a high proportion of students who will likely be represented in the data as part-time workers. While the norm was to use 64 as the upper end of the age bracket, more recent studies have opted to change this to 54 so as to reduce exposure to retirement issues (Aydemir and Skuterud 2005). The result of choosing 54 rather than 64 has only a limited impact on sample size. The sample will include only native-born Canadians and immigrants who live in Canada's three largest cities (Montreal, Toronto, and Vancouver), thus excluding non-permanent residents and the institutionalized.

Immigrants who arrived during the Census reference year (2000) will be excluded from the sample in order to reduce exposure to the various issues arising from immigration and the fact that most will not have worked the entire year. Additionally, recent findings show that immigrants arriving as children tend to have economic outcomes similar to those of the native-born (Schaafsma and Sweetman 2001), so they too will be excluded from the sample. In order to be consistent with general labour force definitions, those immigrants arriving before the age of 15 will be excluded.

An additional consideration is the number of differing places of birth present in the Census data. There are some 224 different places of birth indicated outside of Canada. As a result, there are some immigrant groups who are very small in number. Borjas (2000) opts to use the largest 90 immigrant groups in his study using U.S. data in order to avoid low cell counts. He finds that using the largest 90 immigrant groups accounts for over 90 percent of immigrants. Warman (2007) follows a similar practice in using the largest 40 groups in Canada, though he reran his empirical study using the largest 90 groups to find no significant differences in his results or interpretations. In order to be consistent with the literature, this sample will also be limited to the largest 40 immigrant groups.[9]

[9]Using the largest 40 accounts for nearly 93 percent of all immigrants, while the largest 90 immigrants groups account for approximately 98 percent of all immigrants, but suffers from much lower cell counts. The largest 40 groups are immigrants from China, India, Italy, Hong Kong, Philippines, Portugal, Jamaica, Poland, Viet Nam, United States, Sri Lanka, Guyana, Pakistan, Taiwan, South Korea, Germany, Iran, Greece, Trinidad and Tobago, Haiti, Lebanon, Romania, Russia, Ukraine, Yugoslavia, Egypt, Hungary, the Netherlands, Morocco, South Africa, El

| | Males | | | Females | | | |
|---|---|---|---|---|---|---|---|
| **CMA** | **FB** | **NB** | **Total** | **FB** | **NB** | **Total** | **Total** |
| Montreal | 86,660 | 594,280 | 680,940 | 90,880 | 623,610 | 714,490 | 1,395,425 |
| Toronto | 319,320 | 514,560 | 833,875 | 362,425 | 526,490 | 888,915 | 1,722,790 |
| Vancouver | 120,225 | 265,615 | 385,836 | 144,180 | 261,265 | 405,440 | 791,280 |
| Total | 526,200 | 1,374,450 | 1,900,650 | 597,480 | 1,411,370 | 2,008,850 | 3,909,495 |

Table 1: Proportion of Foreign- and Native-born by CMA in Estimation Sample

The nature of this study is seeking to examine the impact of ethnic enclaves on immigrant outcomes. However, there are some immigrant groups that are culturally and linguistically similar to native-born Canadians. Thus, it becomes difficult to distinguish an ethnic enclave for some groups and more difficult to objectively quantify them. Again following Warman (2007), immigrants who are culturally and linguistically similar to native-born Canadians will be excluded from the sample. These include immigrants from the United States, United Kingdom, Ireland, Australia, New Zealand, and immigrants from France residing in Montreal. Lastly, those observations that do not have full responses for all the variables of interest will also be excluded.

The resulting sample is representative of 3,909,495 native-born Canadians and immigrants, and can be broken into subsamples by city and gender.[10] Table 1 gives the sample sizes for the respective subsamples. There are slightly more females than males in the sample for the native-born and the foreign-born. We observe more immigrant females than immigrant males. Ultimately it can be observed the cell counts are all fairly large.

It can also be observed that the distribution of immigrants is non-random. Table 2 presents the regions of birth of immigrants in the sample by city. While immigrants from Asia-Pacific make up the bulk of the immigrant population in Toronto with 54 percent, we also see many immigrants from Europe and Central and South America, though few from Africa and the Middle East (0.9 and 5.4 percent, respectively). Montreal, by comparison, has fewer immigrants relative to the other cities, and while immigrants from Asia-Pacific are still the largest group (28 percent), the other areas are well represented. Few immigrants from Africa and the Middle East are found in Toronto

Salvador, Japan, Croatia, Bangladesh, Fiji, Algeria, Afghanistan, Chile, Iraq, and Malaysia.

[10] Due to Statistics Canada Census regulations only weighted sample sizes can be presented in tables for the purposes of summarizing the sample data.

| | Montreal | | Toronto | | Vancouver | |
|---|---|---|---|---|---|---|
| **Region** | **Freq.** | **Percent** | **Freq.** | **Percent** | **Freq.** | **Percent** |
| Canada | 4,140 | 0.023 | 11,415 | 0.017 | 7,460 | 0.028 |
| Central and South America | 32,270 | 0.182 | 997,75 | 0.146 | 4,085 | 0.015 |
| Western, Central, and Southern Europe | 36,070 | 0.203 | 86,275 | 0.127 | 22,990 | 0.087 |
| Eastern Europe | 16,095 | 0.091 | 79,280 | 0.116 | 14,905 | 0.056 |
| Middle East | 23,110 | 0.130 | 29,585 | 0.043 | 9,555 | 0.036 |
| Africa | 16,215 | 0.091 | 6,370 | 0.009 | 3,580 | 0.014 |
| Asia-Pacific | 49,635 | 0.280 | 369,050 | 0.541 | 201,820 | 0.763 |
| Total | 177,535 | | 681,740 | | 264,400 | |

Table 2: Regions of Birth by CMA for the Immigrant Sub-Sample

or Vancouver; however, they make up a significant portion of the immigrant population of Montreal (9.1 and 13.0 percent, respectively). Lastly, Vancouver's immigrant population is dominated by immigrants from Asia-Pacific (76.3 percent) and has some immigrants from Europe, Central and South America, and very few from Africa and the Middle East. So an immigrant's choice of city is evidently influenced by the presence of his or her local ethnic community and language. Given the colonial past of Africa and the Middle East, Montreal attracts many French-speaking immigrants from these regions. And similarly, Toronto attracts a large number of South Asian immigrants from the traditional British colonies.

The principal variables to be used in this study are presented in Table 3 with their means for the four main groups to be examined. Immigrant males are on average almost three years older than native-born males, but native-born males earn on average 33 percent more than immigrant males. Similarly for immigrant females, immigrant females are on average two years older than native-born females, but on average earn 30 percent less. Immigrant and native-males in this study have on average the same number of years education, while native-born females have slightly more years of education than foreign-born females.

In this sample, native- and foreign-born males and females appear to have the same proportions, by gender, being employed on a full-time and part-time basis. Immigrants of both genders are much more likely to be married than their native-born counterparts, and have been in Canada an average of 12 years.

| | Males | | Females | |
|---|---|---|---|---|
| **Name (units)** | **Native-born** | **Foreign-born** | **Native-born** | **Foreign-born** |
| EARN ($ ) | 52,154.88 | 39,164.84 | 34,608.75 | 26,648.35 |
| ln(EARN) | 10.49 | 10.18 | 10.1 | 9.76 |
| AGE (Years) | 38.81 | 41.69 | 39.05 | 41.24 |
| ED (Years) | 14.34 | 14.2 | 14.4 | 13.6 |
| YSM Years) | | 12.03 | | 12.1 |
| Part-time (%) | 6.1 | 6.8 | 19.4 | 18.6 |
| Full-time (%) | 94.7 | 94.0 | 81.1 | 81.1 |
| Single (%) | 32.5 | 14.4 | 27.2 | 15.6 |
| Unmarried (%) | 8.3 | 7.1 | 7.6 | 16.0 |
| N(obs) | 1,262,890 | 464,330 | 1,196,385 | 447,455 |

Note: See appendix for sample means of key variables in the estimation sample by CMA.

Table 3: Names and Sample Means for Key Variables in Estimation Sample

# 4 Model Specification

## 4.1 Dependent Variables

In order to examine the effect of neighbourhood-level ethnic enclaves on immigrant earnings, the study will use log earnings as the dependent variable in the earnings estimations. Earnings will be defined as annual employment income received as wages and salaries, net income from unincorporated non-farm business and/or professional practice and net farm self-employment income.[11]

## 4.2 Specification of Ethnic Enclaves

In many empirical studies in which ethnic enclaves need to be specified, the common approach is to use the concentration of an ethnic group in a geographical area to measure the degree of residential segregation (Warman 2007). This ethnic concentration is typically referred to as an *exposure index*. Borjas (2000) and Warman (2007) define exposure indices at the metropolitan-level, while Chiswick and Miller (2002) and Lazear (1999) define their measures at the state- and county- levels, respectively. Rather than defining the exposure index at the metropolitan level, the exposure index here will be defined at a lower geographic level, the census tract. The exposure

[11]Census Variable: EMPIN. Source: Statistics Canada, 2001 Census RDC Codebook.

index in this study will be defined as the fraction of the population living in a census tract (CT) between the ages of 18 and 64, and having been born in the same country. That is,

$$\text{Exposure Index} = \frac{n_{ij}}{n_j}, \tag{2}$$

where $n_{ij}$ is the number of immigrants born in country $i$ and living in census tract $j$, while $n_j$ is simply the total population of census tract $j$. All males and females in this age bracket will be used for calculation regardless of their labour force activity.

Warman (2007) argues that calculating the exposure index at the census tract-level may be problematic as it becomes difficult to control for interaction between neighbourhoods (i.e., census tracts). He suggests that, given the low cost of transportation within a city, it is relatively easy for individuals to have frequent contact with other individuals of the same ethnic background throughout the city. While this is likely the case, it is postulated that calculating the enclave variables at the census tract-level will provide more robust results, as it would be expected that individuals living in a given neighbourhood would more frequently interact with one another than with those in other parts of the city.

While the exposure index is the most commonly used measure of residential segregation, a second measure will also be introduced in the regression models. Also used by Borjas (2000) and Warman (2007), the *relative cluster index* deflates the exposure index by dividing through by the percentage of the total sample made up by the given ethnic group. That is,

$$\text{Relative Cluster Index} = \frac{n_{ij}/n_j}{n_i/n}, \tag{3}$$

where the numerator is simply the exposure index, $n_i$ is the number of immigrants born in country $i$ living in Canada, and $n$ is the total sample size.

While the exposure index is more commonly used and seemingly more intuitive, Bertrand, Luttermer, and Mullianathan (2000) suggest that the exposure index underweights the available contacts for smaller ethnic groups. In examining the results using the relative cluster index, Borjas (2000) finds that there is significant variation in the relative cluster index across cities, supporting

the fact that immigrant groups tend to cluster in different cities.

### 4.3 Specification of Male Earnings

Since the Chiswick (1978) paper, a standard approach to modeling immigrant earnings and assimilation has been used in the literature. Most empirical studies use a reduced-form model based on Chiswick's (1978) model in which the natural logarithm of annual earnings was regressed on education, work experience, years since migration, a series of dichotomous variables for living in the south, being married, being foreign-born, being an alien, and countries of origin. Since this early study, many models have sought to include more control variables, used more sophisticated quantitative methods, and included multiple cross-sections of data.

Since only one cross-section is available for the present study (i.e., Census 2001), a relatively simple model will be specified which follows the earlier models of Chiswick (1978) and Borjas (1985). For the purposes of estimating earnings regressions, the general sample will be restricted to only those observations with positive earnings. The natural logarithm of earnings will be regressed on a vector of socioeconomic characteristics ($X_i$), the number of years since migration ($YSM_i$), either the exposure index or the relative cluster index ($ENCLAVE_i$), and an interaction term between the enclave variable and the years since migration.[12]

$$\ln EARN_i = X_i\alpha + YSM_i\beta_1 + YSM_i^2\beta_2 + ENCLAVE_i\beta_3 + ENCLAVE_i \cdot YSM_i\beta_4 + \epsilon_i \quad (4)$$

The matrix of exogenous socioeconomic variables will include years of education, age in years, and dichtonomous variables for language ability, CMA, marital status, visible minority, part-time worker status, and geographic region of birth for the foreign-born. While Chiswick (1978) and Borjas (1985) use the Mincer identity (age–years of schooling–5) to specify work experience, this study will refrain from such an approximation. Rather, age and years of schooling will be included and thus the returns to work experience will be hidden in the age and education coefficients.[13]

Separate regressions will be estimated using the exposure index and relative cluster index, since

[12] In order to have meaningful results, the interaction terms are computed as $ENCLAVE_i \cdot YSM_i/10,000$.

[13] See appendix for full list of variables.

the two measures are related and would otherwise lead to some degree of multicollinearity. The two measures of ethnic concentrations also introduce the possibility of having downwardly biased standard errors. Moulton (1990) shows that by attempting the measure the effects of an aggregate measure on micro units using OLS, standard errors are biased downward because of the failure to account for the correlation of the error terms within groups. Therefore, it will be necessary to cluster the observations to correct for this. Observations will be clustered by ethnic group in each census tract.

### 4.4 Specification of Female Earnings

The aforementioned model based on Chiswick's (1978) model has been shown to be inappropriate when modeling female immigrant earnings (Long 1980). Rather, the literature suggests that a family-oriented model is more suitable (Long 1980, Beach and Worswick 1993, Duleep and Sanders 1993).

A number of the major datasets do not provide information on actual work experience, and for this reasons many studies have resorted to using the Mincer Identity as a proxy. However, Mincer and Polachek (1974) and Blinder (1976) have shown that the using the Mincer Identity is grossly inappropriate in estimations of female earnings. This measure does not account for the time spent outside of the labour force associated with child-birth and rearing. In order to overcome this shortcoming Oaxaca (1973) suggests using the number of children a woman has had as a proxy for lost work experience, and Gramm (1975) suggests using the age-structure of a woman's children to better model female labour-force behaviour.

A variety of other exogenous variables have been used in the literature which have been found to support the "family investment strategy," though these variables are not available in the Canadian Census data. MacPherson and Stewart (1989), for instance, examine the impact of the adult relatives in the household on the labour participation of immigrant wives. Duleep and Sanders (1993) also examine the husband's characteristics on immigrant wives' decisions to work.

The model that will be used to estimate female immigrant earnings, equation (5), will thus include the same set of socioeconomic variables as the male earnings estimation, but will also include

an additional matrix of family-related variables ($C_i$). Specifically, it will include dictonomous variables for the age structure of a woman's children (i.e., infants and todlers, young children, school-aged children, and teenagers), and a dichotomous variable for immigrant-status of a woman's husband.

$$\ln EARN_i = X_i\alpha + C_i\gamma + YSM_i\beta_1 + YSM_i^2\beta_2 + ENCLAVE_i\beta_3 + ENCLAVE_i \cdot YSM_i\beta_4 + \epsilon_i, \quad (5)$$

As with the male earnings estimations, separate regressions will be estimated using the exposure index and relative cluster index.

### 4.5 Immigrant Employment Patterns

In addition to examining immigrant earnings, this study will also consider the impact that residence in an ethnic enclave has on employment rates for immigrant males and females. For this, the sample will be restricted to only those respondents who are in the labour force, and the dependent variable will take on a value of one if employed, and zero otherwise. Given the dichotomous dependent variable, a simple probit will be used to estimate the impact on the probability of being employed if residing in an ethnic enclave. The same independent variables will be used for the male and female regressions as were used in for the earnings regressions, and the same series of regressions will be estimated (pooled, immigrants-only, and by CMA).

### 4.6 Immigrant Labour Force Participation Patterns

A final set of regressions will be run in a similar manner but using labour force participation as the dichotomous dependent variable. That is, the dependent variable will take on a value of one if in the labour force, and zero otherwise. For this set of regressions the full sample will be used and the same set of independent variables will be used for estimating the same series of (probit) regressions.

# 5 Empirical Results

## 5.1 Ethnic Enclaves

As suggested earlier in the paper, we see significant variation in the prominence of ethnic enclaves across the three CMAs. Table 4 provides the average values of the ethnic enclave variables for each of the three CMAs. For the chosen sample, the average immigrant to Canada lives in a neighbourhood that consists of 7.6 percent of his/her own ethnic group. Immigrants in Vancouver tend to be the most ethnically concentrated (9.4 percent), while immigrants in Montreal tend to be the least concentrated (4.7 percent).

The average CMA values for the relative cluster index are highest for Montreal and lowest for Vancouver. This suggests that the groups in Montreal are over represented relative to the sample, while less so for groups in Vancouver.

It is also possible to divide the sample into two groups, those immigrants living in more ethnically concentrated areas and those in less ethnically concentrated areas. Choosing an exposure index value of 15 percent as the divide between highly concentrated ethnic enclaves and less concentrated ethnic enclaves provides the necessary cell counts and is nearly double the average value of the exposure index for the whole sample. Table 5 provides the average values for selected variables by immigrant sub-samples.

Approximately 15 percent of immigrants live in neighbourhoods where immigrants from the same source country makes up 15 percent or more of the local population. As expected, we see that both males and females, on average, earn significantly less than those in less concentrated areas, are younger, have been in Canada for a shorter period of time, and have fewer years of education. In terms of employment, both males and females are marginally more apt to be employed full time than part-time. The sample examined is that which is used in the earnings regressions, but

| **Enclave Measure** | **Montreal** | **Toronto** | **Vancouver** | **Average** |
|---|---|---|---|---|
| Exposure Index | 0.0468994 | 0.077633 | 0.0941063 | 0.076653 |
| Relative Cluster Index | 6.7435269 | 5.348715 | 5.2194558 | 5.538672 |

Table 4: Prominence of Ethnic Enclaves across CMAs for Estimation Sample

| | Immigrant Males | | Immigrant Females | |
|---|---|---|---|---|
| **Variable** | $< 0.15$ | $\geq 0.15$ | $< 0.15$ | $\geq 0.15$ |
| Earnings ($) | 40,342.54 | 32,939.7 | 27,366.28 | 22,579.17 |
| Age (Years) | 41.83 | 40.97 | 41.38 | 40.51 |
| YSM (Years) | 12.20 | 11.12 | 12.34 | 10.83 |
| Education (Years) | 14.43 | 12.99 | 13.84 | 12.32 |
| Part-time (%) | 6.0 | 7.0 | 19.0 | 17.0 |
| Full-time (%) | 94.0 | 93.0 | 81.0 | 83.0 |
| No language ability (%) | 4.0 | 13.0 | 7.0 | 21.0 |
| N(obs) | 390,460 | 73,870 | 380,350 | 67,105 |

Note: See appendix for sample means of concentrated and non-concentrated ethnic enclaves by CMA.

Table 5: Sample Means for Weakly-concentrated and Strongly-concentrated Ethnic Enclaves

restricted to immigrants. We can observe a high percentage of immigrants who report no official language ability (English or French) being employed and residing in more ethnically concentrated areas. Of immigrant females living in ethnically concentrated areas, nearly 21 percent report no English or French language ability.

While simplistic, this examination of summary means for more and less ethnically concentrated neighbourhoods seems to suggest that those settling in more ethnically concentrated areas seem to be less well off. While examining sample means does not imply causation, it does portray the stark differences between such neighbourhoods. These differences in earnings, employment, and language ability may not be driven by choice of neighbourhood, but may reflect natural ability and productivity of those immigrants settling in ethnic enclaves.

### 5.2 Male Earnings

The male earnings regressions in Table 6 provide the results that were anticipated given the previous findings and our expectations about the effect of localized ethnic enclaves. As found by Chiswick (1978), we see that earnings are increasing in age and years since migration (YSM), but decreasing in age-squared and YSM-squared. We also see that years of education, language ability, and being married are positively related to higher earnings. Also expected are the negative coefficients for the dichotomous variables for living in Montreal and Vancouver, as the costs of living in Toronto

are higher and thus necessitate higher nominal earnings.

The reference group for the pooled sample consists of white, English-speaking, married, native-born Canadians living in Toronto. For both the native- and foreign-born, we see that being non-white negatively impacts earnings and that this impact is more severe for immigrants. The proxy measures for ethnic enclave have negative coefficients, suggesting that the more ethnically concentrated a neighbourhood is, the more severe the impact will be on immigrant earnings.

The initial estimations of the earnings equations resulted in highly significant coefficients for the interaction terms, but with values of zero. In order to have more meaningful results, the interaction terms were scaled down by 10,000.

$$Interaction\ Term\ (E) = \frac{Exposure_i \cdot YSM_i}{10,000}, \quad Interaction\ Term\ (R) = \frac{Relative_i \cdot YSM_i}{10,000}$$

The resulting coefficients for the interaction terms between years since migration and the ethnic enclave variables, the exposure index and relative cluster index, are 212.001 and 2.555, respectively. Therefore, there is an initial negative effect that lessens with years since migration. The results from the first equation (exposure index) suggest that it will take 23.7 years for this negative effect to die away, while the results from the second equation (relative cluster index) suggest a longer time horizon of 35 years.

The second series of regressions in Table 7 consists of pooled samples of foreign- and native-born men for each of the three CMAs. The results are similar to those previously provided and generally meet prior expectations. Age, years since migration, and education all behave as expected, and the language variables differ by city. Only speaking French in Montreal leads to slightly higher earnings than only speaking English, and only speaking English is associated with significantly higher earnings in Toronto and Vancouver. Not being able to speak either official language is observed to be detrimental to earnings as previously found.

As before, ethnicity impacts earnings, but we observe differences between cities. In Vancouver, for instance, Chinese and South Asians are at less of a disadvantage relative to their counterparts in Toronto and Montreal, while Western Asians and Arabs more disadvantaged. Similarly, Latinos and Filipinos seem to fare best in Montreal.

The reference groups for this series of regressions consist of the white, married, English-speaking, native-born Canadians living in the respective CMAs. The series of dichotomous variables for immigrant place of birth also provide interesting results. As was expected all coefficients are negative and significant, but we again see variation in the size of the coefficients. The most striking, perhaps, is the significant difference in the coefficients for immigrants born in Africa. Those African immigrants residing in Montreal appear worse off to those living in Toronto and Vancouver, though this difference may simply reflect differing groups of African immigrants from former British and French colonies.

The ethnic enclave variables in this group of regressions provide similar results to those previously presented. We generally observe that there is an initial negative effect, but this initial effect attenuates with time spent in Canada. Though the results for Montreal are statistically insignificant, they suggest that this initial effect will never die out for immigrants in Montreal. While the results for Toronto and Vancouver are less pessimistic suggesting that the initial disadvantage will be overcome in 22 years for Toronto's immigrants and in 17 years for Vancouver's immigrants.

These results appear consistent with the recent literature. While not directly comparable, Warman (2007) and Borjas (2000) found that immigrants who resided in more ethnically concentrated areas experienced a significant negative impact on their earnings growth in both Canada and the United States. Warman (2007) found this impact to persist in earnings growth until 15 years after immigration using the exposure index, and 20 years after immigration using the relative cluster index.

Table 6: Male Earnings Regressions, Pooled Sample, Foreign-born, and Native-born

| **Variable** | **Pooled Sample** | | **Foreign-born** | | **Native-born** |
|---|---|---|---|---|---|
| age | 0.078*** | 0.078*** | 0.022*** | 0.023*** | 0.082*** |
| | [0.002] | [0.002] | [0.006] | [0.006] | [0.003] |
| age2 | -0.082*** | -0.082*** | -0.028*** | -0.029*** | -0.083*** |
| | [0.003] | [0.003] | [0.007] | [0.007] | [0.003] |
| ysm | 0.026*** | 0.026*** | 0.040*** | 0.039*** | |
| | [0.002] | [0.002] | [0.002] | [0.002] | |
| ysm2 | -0.052*** | -0.051*** | -0.069*** | -0.068*** | |
| | [0.005] | [0.005] | [0.005] | [0.005] | |
| ed | 0.058*** | 0.057*** | 0.050*** | 0.050*** | 0.063*** |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] |
| freonly | -0.057*** | -0.057*** | -0.067** | -0.058* | -0.067*** |
| | [0.012] | [0.012] | [0.033] | [0.033] | [0.013] |
| engfre | 0.052*** | 0.051*** | 0.059*** | 0.059*** | 0.033*** |
| | [0.008] | [0.008] | [0.017] | [0.017] | [0.009] |
| noengfre | -0.138*** | -0.140*** | -0.137*** | -0.140*** | -0.231 |
| | [0.023] | [0.023] | [0.024] | [0.024] | [0.187] |
| chinese | -0.100*** | -0.108*** | -0.164*** | -0.183*** | -0.049*** |
| | [0.014] | [0.014] | [0.034] | [0.034] | [0.019] |
| sasian | -0.111*** | -0.106*** | -0.172*** | -0.178*** | -0.125*** |
| | [0.015] | [0.015] | [0.033] | [0.033] | [0.031] |
| black | -0.242*** | -0.239*** | -0.237*** | -0.240*** | -0.244*** |
| | [0.018] | [0.018] | [0.033] | [0.033] | [0.024] |
| filipino | -0.086*** | -0.093*** | -0.142*** | -0.157*** | -0.037 |
| | [0.020] | [0.020] | [0.037] | [0.037] | [0.046] |
| latin | -0.234*** | -0.228*** | -0.274*** | -0.275*** | -0.086 |
| | [0.039] | [0.038] | [0.051] | [0.050] | [0.072] |
| westarab | -0.263*** | -0.264*** | -0.277*** | -0.284*** | -0.099 |
| | [0.029] | [0.028] | [0.032] | [0.031] | [0.071] |
| asian | -0.120*** | -0.114*** | -0.232*** | -0.232*** | -0.026 |
| | [0.021] | [0.021] | [0.039] | [0.039] | [0.033] |
| othvis | -0.103*** | -0.105*** | -0.119*** | -0.126*** | -0.238*** |
| | [0.023] | [0.023] | [0.034] | [0.034] | [0.070] |
| abor | -0.303*** | -0.303*** | -0.401*** | -0.406*** | -0.285*** |
| | [0.026] | [0.026] | [0.132] | [0.133] | [0.026] |
| mtl | -0.271*** | -0.269*** | -0.344*** | -0.334*** | -0.246*** |
| | [0.010] | [0.010] | [0.017] | [0.017] | [0.012] |
| van | -0.106*** | -0.106*** | -0.110*** | -0.113*** | -0.103*** |
| | [0.007] | [0.007] | [0.011] | [0.011] | [0.008] |
| pt | -1.182*** | -1.180*** | -1.091*** | -1.085*** | -1.205*** |

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Table 6 – Continued

| Variable | Pooled-sample | | Foreign-born | | Native-born |
|---|---|---|---|---|---|
| | [0.010] | [0.010] | [0.018] | [0.018] | [0.012] |
| single | -0.331*** | -0.331*** | -0.191*** | -0.189*** | -0.358*** |
| | [0.006] | [0.006] | [0.013] | [0.013] | [0.006] |
| unmarried | -0.194*** | -0.195*** | -0.138*** | -0.141*** | -0.224*** |
| | [0.008] | [0.008] | [0.018] | [0.018] | [0.009] |
| americas | -0.482*** | -0.458*** | -0.224*** | -0.205*** | |
| | [0.022] | [0.022] | [0.041] | [0.041] | |
| weurope | -0.329*** | -0.310*** | | | |
| | [0.016] | [0.016] | | | |
| oeurope | -0.586*** | -0.549*** | -0.292*** | -0.267*** | |
| | [0.016] | [0.016] | [0.031] | [0.031] | |
| africa | -0.456*** | -0.407*** | -0.129*** | -0.092** | |
| | [0.032] | [0.033] | [0.042] | [0.043] | |
| mideast | -0.527*** | -0.488*** | -0.236*** | -0.206*** | |
| | [0.029] | [0.029] | [0.040] | [0.040] | |
| asiapacific | -0.615*** | -0.603*** | -0.278*** | -0.271*** | |
| | [0.018] | [0.018] | [0.042] | [0.042] | |
| exposure | -0.503*** | | -0.447*** | | |
| | [0.095] | | [0.088] | | |
| interacte | 212.001*** | | 107.028** | | |
| | [53.759] | | [51.476] | | |
| relative | | -0.009*** | | -0.008*** | |
| | | [0.001] | | [0.001] | |
| interactr | | 2.555*** | | 0.771 | |
| | | [0.806] | | [0.790] | |
| Observations | 325,139 | 325,139 | 86,649 | 86,649 | 238,490 |
| R-squared | 0.22 | 0.22 | 0.17 | 0.17 | 0.22 |

Observations clustered by ethnic group in census tract, robust standard errors in brackets. Exposure and relative refer to the exposure index and relative cluster index, while interacte is the interaction term between the exposure index and years since migration. Similarly, interactr is the interaction term between the exposure index and years since migration.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7: Male Earnings Regressions by CMA

| **Variable** | **Montreal** | | **Toronto** | | **Vancouver** | |
|---|---|---|---|---|---|---|
| age | 0.070*** | 0.070*** | 0.086*** | 0.087*** | 0.076*** | 0.076*** |
| | [0.004] | [0.004] | [0.004] | [0.004] | [0.005] | [0.005] |
| age2 | -0.068*** | -0.068*** | -0.095*** | -0.095*** | -0.079*** | -0.078*** |
| | [0.005] | [0.005] | [0.005] | [0.005] | [0.006] | [0.006] |
| ysm | 0.022*** | 0.021*** | 0.027*** | 0.027*** | 0.023*** | 0.022*** |
| | [0.004] | [0.004] | [0.002] | [0.002] | [0.004] | [0.004] |
| ysm2 | -0.034** | -0.038*** | -0.053*** | -0.051*** | -0.042*** | -0.041*** |
| | [0.014] | [0.014] | [0.006] | [0.006] | [0.011] | [0.011] |
| ed | 0.060*** | 0.060*** | 0.059*** | 0.059*** | 0.049*** | 0.049*** |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] |
| freonly | 0.007 | 0.008 | -0.171 | -0.165 | -1.381 | -1.384 |
| | [0.021] | [0.021] | [0.166] | [0.167] | [0.927] | [0.928] |
| engfre | 0.113*** | 0.114*** | 0.059*** | 0.058*** | -0.048*** | -0.048*** |
| | [0.019] | [0.019] | [0.011] | [0.011] | [0.016] | [0.016] |
| noengfre | -0.206*** | -0.212*** | -0.124*** | -0.123*** | -0.147*** | -0.151*** |
| | [0.076] | [0.076] | [0.033] | [0.033] | [0.036] | [0.036] |
| chinese | -0.097* | -0.102* | -0.111*** | -0.120*** | -0.097*** | -0.097*** |
| | [0.056] | [0.056] | [0.019] | [0.019] | [0.023] | [0.023] |
| sasian | -0.132** | -0.127** | -0.149*** | -0.142*** | -0.042 | -0.044 |
| | [0.060] | [0.060] | [0.018] | [0.018] | [0.031] | [0.031] |
| black | -0.222*** | -0.225*** | -0.237*** | -0.238*** | -0.247*** | -0.245*** |
| | [0.040] | [0.040] | [0.021] | [0.021] | [0.061] | [0.061] |
| filipino | 0.019 | -0.024 | -0.117*** | -0.122*** | -0.044 | -0.05 |
| | [0.075] | [0.071] | [0.025] | [0.025] | [0.035] | [0.035] |
| latin | -0.083 | -0.075 | -0.285*** | -0.273*** | -0.427*** | -0.420*** |
| | [0.075] | [0.075] | [0.052] | [0.051] | [0.105] | [0.105] |
| westarab | -0.193*** | -0.197*** | -0.195*** | -0.191*** | -0.320*** | -0.313*** |
| | [0.043] | [0.043] | [0.041] | [0.041] | [0.099] | [0.100] |
| asian | 0.103* | 0.108* | -0.147*** | -0.138*** | -0.174*** | -0.170*** |
| | [0.062] | [0.062] | [0.027] | [0.026] | [0.039] | [0.039] |
| othvis | 0.07 | 0.073 | -0.158*** | -0.156*** | -0.053 | -0.055 |
| | [0.072] | [0.072] | [0.027] | [0.027] | [0.064] | [0.063] |
| abor | -0.253*** | -0.253*** | -0.223*** | -0.224*** | -0.381*** | -0.381*** |
| | [0.061] | [0.061] | [0.038] | [0.038] | [0.039] | [0.039] |
| pt | -1.142*** | -1.142*** | -1.229*** | -1.228*** | -1.157*** | -1.156*** |
| | [0.018] | [0.018] | [0.016] | [0.016] | [0.020] | [0.020] |
| single | -0.346*** | -0.345*** | -0.328*** | -0.327*** | -0.308*** | -0.308*** |
| | [0.010] | [0.010] | [0.008] | [0.008] | [0.012] | [0.012] |
| unmarried | -0.213*** | -0.212*** | -0.179*** | -0.180*** | -0.199*** | -0.200*** |
| | [0.014] | [0.014] | [0.012] | [0.012] | [0.017] | [0.017] |

Continued on following page.

Table 7 – Continued

| Variable | Montreal | | Toronto | | Vancouver | |
|---|---|---|---|---|---|---|
| americas | -0.561*** | -0.536*** | -0.428*** | -0.411*** | -0.300*** | -0.284*** |
| | [0.058] | [0.058] | [0.026] | [0.026] | [0.075] | [0.075] |
| weurope | -0.314*** | -0.311*** | -0.316*** | -0.297*** | -0.233*** | -0.220*** |
| | [0.035] | [0.035] | [0.021] | [0.021] | [0.035] | [0.035] |
| oeurope | -0.568*** | -0.548*** | -0.575*** | -0.531*** | -0.560*** | -0.540*** |
| | [0.040] | [0.040] | [0.019] | [0.020] | [0.040] | [0.040] |
| africa | -0.635*** | -0.588*** | -0.227*** | -0.197*** | -0.205*** | -0.177** |
| | [0.053] | [0.054] | [0.045] | [0.046] | [0.074] | [0.075] |
| mideast | -0.534*** | -0.499*** | -0.544*** | -0.525*** | -0.534*** | -0.502*** |
| | [0.052] | [0.054] | [0.040] | [0.040] | [0.100] | [0.099] |
| asiapacific | -0.633*** | -0.627*** | -0.574*** | -0.567*** | -0.635*** | -0.617*** |
| | [0.061] | [0.062] | [0.023] | [0.023] | [0.035] | [0.035] |
| exposure | -0.510* | | -0.589*** | | -0.542*** | |
| | [0.309] | | [0.130] | | [0.157] | |
| interacte | -283.981 | | 265.251*** | | 356.935*** | |
| | [193.439] | | [69.806] | | [110.618] | |
| relative | | -0.006*** | | -0.010*** | | -0.014*** |
| | | [0.002] | | [0.002] | | [0.003] |
| interactr | | 0.871 | | 2.522** | | 8.436*** |
| | | [1.380] | | [1.152] | | [1.981] |
| Observations | 115,634 | 115,634 | 145,824 | 145,824 | 63,681 | 63,681 |
| R-squared | 0.20 | 0.20 | 0.21 | 0.21 | 0.24 | 0.24 |

Observations clustered by ethnic group in census tract, robust standard errors in brackets. Exposure and relative refer to the exposure index and relative cluster index, while interacte is the interaction term between the exposure index and years since migration. Similarly, interactr is the interaction term between the exposure index and years since migration.
* significant at 10%; ** significant at 5%; *** significant at 1%

### 5.3 Female Earnings

The female earnings regressions in Table 8 provide the results that were generally anticipated and similar to those of the male earnings regressions. Earnings are increasing in age and years since migration (YSM), but decreasing in age-squared and YSM-squared. Years of education, language ability, and being married are positively related to higher earnings. Living in Montreal or Vancouver are associated with lower earnings relative to those in Toronto and relative to the white, native-born reference group, ethnicity is associated with lower earnings, except for the Chinese and Filipinos, who earn relatively more.

The reference group for the pooled sample consists of white, married, English-speaking, native-born Canadians living in Toronto without children. The female earnings regressions include a series of variables describing the age structure of a woman's children and the immigrant status of her husband. Since no years-of-experience variable is available within the census, including the age structure of a woman's children proxies lost labour force experience due to child rearing. As can be seen, having children (especially infants) negatively impacts a woman's earnings. From the foreign-born regressions, it appears that having children is more detrimental to an immigrant woman's earnings than to a native-born woman. Interestingly, a woman with an immigrant husband also experiences an earnings disadvantage relative to an immigrant woman not married to an immigrant. This likely encompasses some cultural issues as well as a compounded lack of familiarity with the Canadian labour market for the couple.

The ethnic enclave variables provide similar results to the male regressions. We see that the exposure and relative cluster indices have negative coefficients, but the interaction terms between the ethnic enclave variables and years since migration are significantly positive. Thus, we see an initial negative effect that attenuates with years since migration. The results from the first equation suggest that it will take 17.8 years for the initial negative effect to die away, while the results from the second regression (relative cluster index) suggest 24.3 years until the effect is removed.

The second series of regressions in Table 9 consists of pooled samples of foreign- and native-born women for each of the three CMAs. The age, years since migration, and years of education variables all behave as expected, though the language variables differ. The reference groups for

these regressions consist of white, married, English-speaking, native-born Canadian women living in the respective CMAs. For Montreal, speaking only English is a disadvantage even if the immigrant does not speak French. This result is surprising and seems to suggest that linguistic enclaves may provide for higher earnings relative to the English-economy in Montreal.

Another interesting element of these regressions is that the Chinese and Filipino ethnic groups appear to do very well relative the base (white) ethnicity in Vancouver. All of the dichotomous variables for immigrant place of birth are negative and significant suggesting that immigrant women are significantly disadvantaged in earnings relative to their native-born counterparts.

The ethnic enclave coefficients are significant and much larger than for immigrant men, indicating that immigrant female earnings might be more adversely affected by ethnic enclaves. The interaction terms are also larger in magnitude, suggesting that, while immigrant women face a larger initial disadvantage, this disadvantage attenuates faster than for immigrant men. These results seem to fit with the type of work immigrant wives take and the working conditions associated with the captured work force of recently arrived immigrants in ethnic enclaves. This explanation may be supported by the fact that the interaction terms coefficient is positive suggesting that once immigrants gain further experience and a knowledge of the Canadian labour market they can pursue their own ventures or demand better conditions or compensation in the enclave. As before, the results presented here are consistent with those of Warman (2007).

Table 8: Female Earnings Regressions, Pooled Sample, Foreign-born, and Native-born

| **Variable** | **Pooled Sample** | | **Foreign-born** | | **Native-born** |
|---|---|---|---|---|---|
| age | 0.092*** | 0.092*** | 0.044*** | 0.045*** | 0.098*** |
| | [0.003] | [0.003] | [0.007] | [0.007] | [0.003] |
| age2 | -0.099*** | -0.100*** | -0.053*** | -0.054*** | -0.104*** |
| | [0.003] | [0.003] | [0.008] | [0.008] | [0.004] |
| ysm | 0.032*** | 0.032*** | 0.054*** | 0.054*** | |
| | [0.002] | [0.002] | [0.002] | [0.002] | |
| ysm2 | -0.064*** | -0.064*** | -0.104*** | -0.103*** | |
| | [0.006] | [0.006] | [0.006] | [0.006] | |
| ed | 0.064*** | 0.064*** | 0.051*** | 0.050*** | 0.073*** |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] |
| freonly | -0.110*** | -0.109*** | -0.047 | -0.033 | -0.133*** |
| | [0.011] | [0.011] | [0.031] | [0.031] | [0.011] |
| engfre | 0.061*** | 0.060*** | 0.133*** | 0.131*** | 0.030*** |
| | [0.008] | [0.008] | [0.018] | [0.018] | [0.008] |
| noengfre | -0.116*** | -0.121*** | -0.134*** | -0.138*** | -0.613*** |
| | [0.022] | [0.022] | [0.023] | [0.023] | [0.215] |
| chinese | 0.035** | 0.028** | 0.037 | 0.021 | 0.042** |
| | [0.014] | [0.014] | [0.034] | [0.034] | [0.018] |
| sasian | -0.085*** | -0.083*** | -0.109*** | -0.114*** | -0.049* |
| | [0.015] | [0.015] | [0.033] | [0.033] | [0.026] |
| black | -0.159*** | -0.156*** | -0.107*** | -0.110*** | -0.186*** |
| | [0.019] | [0.019] | [0.037] | [0.037] | [0.026] |
| filipino | 0.018 | 0.013 | 0.054 | 0.043 | -0.064 |
| | [0.018] | [0.018] | [0.036] | [0.036] | [0.052] |
| latin | -0.154*** | -0.147*** | -0.122** | -0.122** | -0.229** |
| | [0.041] | [0.041] | [0.052] | [0.052] | [0.113] |
| westarab | -0.246*** | -0.239*** | -0.240*** | -0.244*** | -0.047 |
| | [0.033] | [0.033] | [0.036] | [0.036] | [0.085] |
| asian | -0.054*** | -0.047** | -0.097** | -0.095** | 0.028 |
| | [0.020] | [0.020] | [0.039] | [0.039] | [0.030] |
| othvis | -0.057** | -0.059** | -0.044 | -0.05 | -0.026 |
| | [0.024] | [0.024] | [0.038] | [0.038] | [0.046] |
| abor | -0.309*** | -0.309*** | 0.251 | 0.253 | -0.305*** |
| | [0.027] | [0.027] | [0.185] | [0.185] | [0.028] |
| pt | -0.960*** | -0.960*** | -0.915*** | -0.913*** | -0.972*** |
| | [0.006] | [0.006] | [0.012] | [0.012] | [0.007] |
| single | -0.121*** | -0.121*** | -0.096*** | -0.094*** | -0.122*** |
| | [0.006] | [0.006] | [0.017] | [0.017] | [0.006] |
| unmarried | -0.086*** | -0.086*** | -0.107*** | -0.106*** | -0.076*** |

Continued on following page.

Table 8 – Continued

| Variable | Pooled-sample | | Foreign-born | | Native-born |
|---|---|---|---|---|---|
| | [0.007] | [0.007] | [0.015] | [0.015] | [0.007] |
| americas | -0.475*** | -0.459*** | -0.221*** | -0.204*** | |
| | [0.023] | [0.023] | [0.041] | [0.041] | |
| weurope | -0.407*** | -0.395*** | | | |
| | [0.017] | [0.017] | | | |
| oeurope | -0.618*** | -0.587*** | -0.275*** | -0.253*** | |
| | [0.018] | [0.019] | [0.029] | [0.029] | |
| africa | -0.431*** | -0.393*** | -0.099** | -0.063 | |
| | [0.033] | [0.033] | [0.040] | [0.041] | |
| mideast | -0.577*** | -0.551*** | -0.260*** | -0.233*** | |
| | [0.033] | [0.033] | [0.040] | [0.040] | |
| asiapacific | -0.635*** | -0.631*** | -0.318*** | -0.313*** | |
| | [0.019] | [0.019] | [0.041] | [0.041] | |
| mtl | -0.233*** | -0.232*** | -0.297*** | -0.289*** | -0.210*** |
| | [0.009] | [0.009] | [0.018] | [0.018] | [0.010] |
| van | -0.064*** | -0.064*** | -0.068*** | -0.069*** | -0.062*** |
| | [0.006] | [0.006] | [0.011] | [0.011] | [0.007] |
| infants | -0.204*** | -0.205*** | -0.208*** | -0.209*** | -0.209*** |
| | [0.009] | [0.009] | [0.019] | [0.019] | [0.010] |
| young | -0.067*** | -0.067*** | -0.116*** | -0.114*** | -0.053*** |
| | [0.008] | [0.008] | [0.016] | [0.016] | [0.009] |
| schchild | -0.104*** | -0.103*** | -0.115*** | -0.112*** | -0.095*** |
| | [0.006] | [0.006] | [0.013] | [0.013] | [0.007] |
| oldchild | -0.073*** | -0.072*** | -0.067*** | -0.064*** | -0.065*** |
| | [0.006] | [0.006] | [0.013] | [0.013] | [0.007] |
| imhusband | -0.047*** | -0.044*** | -0.016 | -0.015 | |
| | [0.009] | [0.009] | [0.011] | [0.011] | |
| exposure | -0.673*** | | -0.452*** | | |
| | [0.111] | | [0.103] | | |
| interacte | 377.196*** | | 139.764** | | |
| | [63.184] | | [59.880] | | |
| relative | | -0.011*** | | -0.007*** | |
| | | [0.001] | | [0.001] | |
| interactr | | 4.529*** | | 1.032 | |
| | | [0.807] | | [0.813] | |
| Observations | 310,560 | 310,560 | 83,563 | 83,563 | 226,997 |
| R-squared | 0.21 | 0.22 | 0.18 | 0.18 | 0.22 |

Observations clustered by ethnic group in census tract, robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 9: Female Earnings Regressions by CMA

| **Variable** | **Montreal** | | **Toronto** | | **Vancouver** | |
|---|---|---|---|---|---|---|
| age | 0.077*** | 0.077*** | 0.102*** | 0.103*** | 0.093*** | 0.094*** |
| | [0.004] | [0.004] | [0.004] | [0.004] | [0.006] | [0.006] |
| age2 | -0.078*** | -0.077*** | -0.113*** | -0.114*** | -0.103*** | -0.103*** |
| | [0.006] | [0.006] | [0.005] | [0.005] | [0.007] | [0.007] |
| ysm | 0.021*** | 0.021*** | 0.034*** | 0.034*** | 0.029*** | 0.028*** |
| | [0.004] | [0.004] | [0.002] | [0.002] | [0.004] | [0.004] |
| ysm2 | -0.037*** | -0.037*** | -0.065*** | -0.065*** | -0.058*** | -0.057*** |
| | [0.014] | [0.014] | [0.007] | [0.007] | [0.012] | [0.012] |
| ed | 0.072*** | 0.072*** | 0.063*** | 0.063*** | 0.051*** | 0.052*** |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.002] | [0.002] |
| freonly | 0.046** | 0.049** | -0.410** | -0.416** | -0.886** | -0.886** |
| | [0.023] | [0.023] | [0.206] | [0.206] | [0.363] | [0.364] |
| engfre | 0.213*** | 0.216*** | 0.058*** | 0.057*** | -0.025 | -0.026 |
| | [0.022] | [0.022] | [0.009] | [0.009] | [0.017] | [0.017] |
| noengfre | 0.082 | 0.079 | -0.116*** | -0.115*** | -0.191*** | -0.201*** |
| | [0.061] | [0.061] | [0.030] | [0.030] | [0.041] | [0.040] |
| chinese | -0.061 | -0.064 | 0.044** | 0.038** | 0.047** | 0.044** |
| | [0.059] | [0.059] | [0.019] | [0.019] | [0.022] | [0.022] |
| sasian | -0.07 | -0.068 | -0.119*** | -0.115*** | -0.007 | -0.017 |
| | [0.062] | [0.062] | [0.019] | [0.019] | [0.026] | [0.026] |
| black | -0.088** | -0.088** | -0.174*** | -0.175*** | -0.248*** | -0.247*** |
| | [0.041] | [0.041] | [0.023] | [0.023] | [0.086] | [0.086] |
| filipino | -0.013 | -0.058 | -0.008 | -0.013 | 0.119*** | 0.120*** |
| | [0.071] | [0.067] | [0.024] | [0.024] | [0.031] | [0.031] |
| latin | -0.087 | -0.083 | -0.196*** | -0.188*** | -0.147 | -0.136 |
| | [0.077] | [0.077] | [0.061] | [0.060] | [0.116] | [0.116] |
| westarab | -0.172*** | -0.174*** | -0.197*** | -0.192*** | -0.326** | -0.320** |
| | [0.051] | [0.052] | [0.049] | [0.049] | [0.137] | [0.137] |
| asian | 0.028 | 0.034 | -0.061** | -0.058** | -0.084** | -0.066* |
| | [0.065] | [0.065] | [0.027] | [0.027] | [0.037] | [0.036] |
| othvis | -0.075 | -0.076 | -0.083*** | -0.083*** | 0.079 | 0.079 |
| | [0.079] | [0.079] | [0.028] | [0.028] | [0.068] | [0.068] |
| abor | -0.336*** | -0.336*** | -0.258*** | -0.258*** | -0.343*** | -0.342*** |
| | [0.083] | [0.083] | [0.041] | [0.041] | [0.039] | [0.039] |
| pt | -0.901*** | -0.900*** | -1.019*** | -1.018*** | -0.939*** | -0.938*** |
| | [0.011] | [0.011] | [0.010] | [0.010] | [0.012] | [0.012] |
| single | -0.095*** | -0.095*** | -0.143*** | -0.141*** | -0.125*** | -0.125*** |
| | [0.010] | [0.010] | [0.009] | [0.009] | [0.013] | [0.013] |
| unmarried | -0.068*** | -0.068*** | -0.096*** | -0.096*** | -0.107*** | -0.107*** |
| | [0.011] | [0.011] | [0.010] | [0.010] | [0.015] | [0.015] |

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Table 9 – Continued

| Variable | Montreal | | Toronto | | Vancouver | |
|---|---|---|---|---|---|---|
| americas | -0.428*** | -0.402*** | -0.476*** | -0.461*** | -0.379*** | -0.366*** |
| | [0.058] | [0.059] | [0.028] | [0.028] | [0.104] | [0.104] |
| weurope | -0.304*** | -0.293*** | -0.441*** | -0.421*** | -0.337*** | -0.329*** |
| | [0.036] | [0.037] | [0.024] | [0.023] | [0.034] | [0.034] |
| oeurope | -0.588*** | -0.572*** | -0.633*** | -0.593*** | -0.536*** | -0.518*** |
| | [0.042] | [0.043] | [0.023] | [0.024] | [0.042] | [0.043] |
| africa | -0.557*** | -0.499*** | -0.331*** | -0.305*** | -0.200*** | -0.169*** |
| | [0.057] | [0.059] | [0.055] | [0.056] | [0.055] | [0.055] |
| mideast | -0.459*** | -0.422*** | -0.668*** | -0.650*** | -0.460*** | -0.426*** |
| | [0.055] | [0.057] | [0.049] | [0.049] | [0.131] | [0.130] |
| asiapacific | -0.483*** | -0.487*** | -0.640*** | -0.632*** | -0.646*** | -0.644*** |
| | [0.066] | [0.066] | [0.025] | [0.024] | [0.035] | [0.035] |
| infants | -0.212*** | -0.212*** | -0.213*** | -0.213*** | -0.179*** | -0.180*** |
| | [0.016] | [0.016] | [0.013] | [0.013] | [0.020] | [0.020] |
| young | -0.039*** | -0.039*** | -0.085*** | -0.084*** | -0.079*** | -0.079*** |
| | [0.013] | [0.013] | [0.011] | [0.011] | [0.020] | [0.020] |
| schchild | -0.060*** | -0.061*** | -0.127*** | -0.125*** | -0.124*** | -0.123*** |
| | [0.010] | [0.010] | [0.009] | [0.009] | [0.014] | [0.014] |
| oldchild | -0.030*** | -0.030*** | -0.111*** | -0.109*** | -0.064*** | -0.063*** |
| | [0.010] | [0.010] | [0.010] | [0.010] | [0.014] | [0.014] |
| imhusband | -0.002 | -0.002 | -0.056*** | -0.052*** | -0.055*** | -0.057*** |
| | [0.024] | [0.024] | [0.012] | [0.012] | [0.020] | [0.020] |
| exposure | -1.166*** | | -0.557*** | | -0.871*** | |
| | [0.343] | | [0.152] | | [0.182] | |
| interacte | 306.968 | | 348.753*** | | 489.440*** | |
| | [195.597] | | [80.747] | | [127.279] | |
| relative | | -0.010*** | | -0.011*** | | -0.017*** |
| | | [0.003] | | [0.001] | | [0.004] |
| interactr | | 3.175** | | 3.830*** | | 10.727*** |
| | | [1.572] | | [1.097] | | [2.321] |
| Observations | 109,591 | 109,591 | 139,998 | 139,998 | 60,971 | 60,971 |
| R-squared | 0.20 | 0.20 | 0.22 | 0.22 | 0.22 | 0.22 |

Observations clustered by ethnic group in census tract, robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

### 5.4 Male Employment Patterns

In order to examine the effect of residence in an ethnic enclave on the likelihood of being employed versus unemployed, a probit model was estimated using the general sample criteria for those in the labour force (employed or unemployed). The results for the male subsample are reported in Tables 10 and 11, and while the results are not quite as robust as they were for the earnings regressions, they do provide some interesting results. The ethnicity and demographic variable coefficients are generally as expected, though a number are statistically insignificant. Age and years since migration increase the likelihood of being employed, while inability to speak English is detrimental. Generally, immigrants are less likely to be employed, though those identifying themselves as Filipinos appear to have greater success in finding employment than the other non-white ethnicities.

We also observe that residing in Toronto increases the likelihood of employment and this is especially so for immigrants. This perhaps reflects the differences in the local economies of the three CMAs. At the time of the Census, Toronto was still experiencing significant growth, while Montreal was experiencing some degree of slower growth.

While the ethnic enclave variables had an effect on earnings, they do not appear to significantly affect the likelihood of employment for immigrant men. The exposure index coefficients are negative, though insignificant and the relative cluster index coefficients are negative and significant, though very small. Similarly, the interaction terms have similar results. Ultimately this seems to suggest that residence in an ethnic enclave does not increase the likelihood for an immigrant to be employed. The sample includes all immigrants who fit the general sample criteria, so it is possible that enclaves would be shown to be beneficial for recently arrived immigrants if a subset of the sample were chosen.

In separating the pooled sample by CMA (Table 11), we generally observe similar results for most variables. The ethnic enclave variables remain inconclusive when examined by city. The exposure index coefficients are all negative, though statistically insignificant. And while the relative cluster index coefficients are statistically significant, they remain very small in magnitude. Similarly, some of the coefficients for interaction terms are also statistically significant, but are even smaller in magnitude. From these two sets of regression results, it appears that enclaves affect not the incidence or probability of employment, but rather the "quality" or type of employment and hence

the wages.

While there is no comparable Canadian study, Clark and Drinkwater (2002) examine the impact of ethnic residential segregation for England and Wales and find that those individuals residing in a more ethnically concentrated area are more likely to be unemployed. The results presented above differ from those of Clark and Drinkwater (2002) and may reflect the differences in the types, prominence, and number of ethnic enclaves between the two countries. Brennan et al. (2000) suggest that enclaves in the United Kingston exhibit a shortage of available employment opportunities and a lack appropriate human capital. The above results may suggest that, enclaves in Canada provide a sufficient level of employment, but that this employment is generally lower quality.

Table 10: Male Employment Patterns

| **Variable** | **Pooled Sample** | | **Foreign-born** | | **Native-born** |
|---|---|---|---|---|---|
| age | 0.002*** | 0.002*** | -0.002 | -0.002 | 0.002*** |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] |
| age2 | -0.002*** | -0.002*** | 0.001 | 0.001 | -0.002*** |
| | [0.001] | [0.001] | [0.002] | [0.002] | [0.001] |
| ysm | 0.005*** | 0.005*** | 0.007*** | 0.007*** | |
| | [0.000] | [0.000] | [0.000] | [0.000] | |
| ysm2 | -0.012*** | -0.012*** | -0.016*** | -0.016*** | |
| | [0.001] | [0.001] | [0.001] | [0.001] | |
| ed | 0.003*** | 0.003*** | 0.001*** | 0.001*** | 0.004*** |
| | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| freonly | -0.004* | -0.004* | -0.020*** | -0.018** | -0.004 |
| | [0.003] | [0.003] | [0.007] | [0.007] | [0.003] |
| engfre | 0.002 | 0.002 | -0.002 | -0.001 | -0.001 |
| | [0.002] | [0.002] | [0.004] | [0.004] | [0.002] |
| noengfre | -0.004 | -0.003 | -0.014*** | -0.014*** | 0.012 |
| | [0.004] | [0.004] | [0.005] | [0.005] | [0.021] |
| chinese | -0.019*** | -0.020*** | -0.023** | -0.025** | -0.007 |
| | [0.004] | [0.004] | [0.010] | [0.010] | [0.005] |
| sasian | -0.004 | -0.004 | -0.003 | -0.004 | -0.016** |
| | [0.003] | [0.003] | [0.009] | [0.009] | [0.007] |
| black | -0.042*** | -0.041*** | -0.028*** | -0.028*** | -0.038*** |
| | [0.005] | [0.005] | [0.011] | [0.011] | [0.006] |
| filipino | 0.016*** | 0.015*** | 0.023*** | 0.021*** | 0.005 |
| | [0.003] | [0.003] | [0.007] | [0.008] | [0.011] |
| latin | -0.045*** | -0.046*** | -0.036** | -0.037** | -0.045* |
| | [0.011] | [0.011] | [0.015] | [0.015] | [0.024] |
| westarab | -0.038*** | -0.038*** | -0.044*** | -0.045*** | -0.004 |
| | [0.007] | [0.007] | [0.009] | [0.009] | [0.015] |
| asian | -0.010** | -0.011** | -0.017 | -0.019* | 0.001 |
| | [0.004] | [0.004] | [0.011] | [0.011] | [0.007] |
| othvis | -0.017*** | -0.018*** | -0.016 | -0.018* | -0.017 |
| | [0.006] | [0.006] | [0.010] | [0.011] | [0.013] |
| abor | -0.077*** | -0.077*** | -0.014 | -0.015 | -0.065*** |
| | [0.008] | [0.008] | [0.054] | [0.055] | [0.007] |
| mtl | -0.029*** | -0.029*** | -0.059*** | -0.058*** | -0.019*** |
| | [0.002] | [0.002] | [0.005] | [0.005] | [0.002] |
| van | -0.024*** | -0.024*** | -0.029*** | -0.029*** | -0.021*** |
| | [0.002] | [0.002] | [0.003] | [0.003] | [0.002] |
| single | -0.065*** | -0.065*** | -0.057*** | -0.058*** | -0.063*** |
| | [0.002] | [0.002] | [0.004] | [0.004] | [0.002] |

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Table 10 – Continued

| **Variable** | **Pooled Sample** | | **Foreign-born** | | **Native-born** |
|---|---|---|---|---|---|
| unmarried | -0.047*** | -0.048*** | -0.048*** | -0.048*** | -0.049*** |
| | [0.002] | [0.002] | [0.005] | [0.005] | [0.003] |
| americas | -0.063*** | -0.056*** | 0.000 | 0.003 | -0.070 |
| | [0.008] | [0.007] | [0.010] | [0.010] | [0.064] |
| weurope | -0.043*** | -0.037*** | 0.024*** | 0.025*** | -0.017 |
| | [0.005] | [0.005] | [0.007] | [0.007] | [0.014] |
| oeurope | -0.109*** | -0.097*** | -0.009 | -0.006 | |
| | [0.007] | [0.007] | [0.009] | [0.009] | |
| africa | -0.148*** | -0.133*** | -0.018 | -0.013 | |
| | [0.013] | [0.013] | [0.011] | [0.011] | |
| mideast | -0.091*** | -0.079*** | 0.003 | 0.007 | -0.037 |
| | [0.011] | [0.010] | [0.009] | [0.009] | [0.081] |
| asiapacific | -0.102*** | -0.093*** | -0.017 | -0.014 | -0.022 |
| | [0.007] | [0.007] | [0.011] | [0.011] | [0.034] |
| exposure | -0.023 | | -0.021 | | |
| | [0.015] | | [0.018] | | |
| interacte | 27.754** | | 12.031 | | |
| | [11.029] | | [12.840] | | |
| relative | | -0.001*** | | -0.001*** | |
| | | [0.000] | | [0.000] | |
| interactr | | 0.390*** | | 0.213 | |
| | | [0.146] | | [0.169] | |
| Observations | 328,157 | 328,157 | 88,310 | 88,310 | 239,826 |

Marginal effects reported. Observations clustered by ethnic group in census tract, robust standard errors in brackets. * significant at 10%; ** significant at 5% ; *** significant at 1%

Table 11: Male Employment Patterns by CMA

| **Variable** | **Montreal** | | **Toronto** | | **Vancouver** | |
|---|---|---|---|---|---|---|
| age | 0.000 | 0.000 | 0.003*** | 0.003*** | 0.002* | 0.002 |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] |
| age2 | 0.000 | 0.000 | -0.004*** | -0.004*** | -0.003* | -0.003 |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.002] | [0.002] |
| ysm | 0.004*** | 0.004*** | 0.004*** | 0.004*** | 0.007*** | 0.006*** |
| | [0.001] | [0.001] | [0.000] | [0.000] | [0.001] | [0.001] |
| ysm2 | -0.009*** | -0.009*** | -0.009*** | -0.009*** | -0.018*** | -0.017*** |
| | [0.003] | [0.003] | [0.001] | [0.001] | [0.003] | [0.003] |
| ed | 0.004*** | 0.004*** | 0.001*** | 0.001*** | 0.004*** | 0.004*** |
| | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| freonly | 0.017*** | 0.018*** | -0.028 | -0.026 | -0.091 | -0.091 |
| | [0.004] | [0.004] | [0.031] | [0.030] | [0.144] | [0.144] |
| engfre | 0.026*** | 0.027*** | -0.005** | -0.005** | -0.017*** | -0.017*** |
| | [0.004] | [0.004] | [0.002] | [0.002] | [0.005] | [0.005] |
| noengfre | 0.010 | 0.010 | -0.004 | -0.004 | -0.012 | -0.011 |
| | [0.013] | [0.013] | [0.005] | [0.005] | [0.008] | [0.008] |
| chinese | -0.017 | -0.017 | -0.026*** | -0.026*** | -0.008 | -0.008 |
| | [0.012] | [0.012] | [0.005] | [0.005] | [0.006] | [0.006] |
| sasian | -0.025* | -0.024* | -0.011*** | -0.010** | 0.021*** | 0.022*** |
| | [0.013] | [0.013] | [0.004] | [0.004] | [0.005] | [0.005] |
| black | -0.052*** | -0.052*** | -0.033*** | -0.033*** | -0.041** | -0.041** |
| | [0.012] | [0.012] | [0.006] | [0.006] | [0.021] | [0.021] |
| filipino | 0.026*** | 0.023** | 0.006 | 0.005 | 0.033*** | 0.031*** |
| | [0.010] | [0.011] | [0.004] | [0.005] | [0.006] | [0.006] |
| latin | -0.044** | -0.043** | -0.044*** | -0.043*** | -0.039 | -0.038 |
| | [0.019] | [0.019] | [0.015] | [0.015] | [0.032] | [0.032] |
| westarab | -0.038*** | -0.039*** | -0.019* | -0.018* | -0.027 | -0.025 |
| | [0.009] | [0.010] | [0.011] | [0.011] | [0.028] | [0.028] |
| asian | -0.014 | -0.014 | -0.016*** | -0.016*** | -0.002 | -0.003 |
| | [0.013] | [0.013] | [0.006] | [0.006] | [0.008] | [0.008] |
| othvis | -0.02 | -0.02 | -0.023*** | -0.023*** | -0.006 | -0.007 |
| | [0.018] | [0.018] | [0.007] | [0.007] | [0.016] | [0.016] |
| abor | -0.066*** | -0.066*** | -0.029** | -0.029** | -0.113*** | -0.113*** |
| | [0.018] | [0.018] | [0.012] | [0.012] | [0.013] | [0.013] |
| single | -0.083*** | -0.083*** | -0.043*** | -0.044*** | -0.075*** | -0.075*** |
| | [0.003] | [0.003] | [0.002] | [0.002] | [0.004] | [0.004] |
| unmarried | -0.059*** | -0.059*** | -0.039*** | -0.039*** | -0.045*** | -0.045*** |
| | [0.004] | [0.004] | [0.003] | [0.003] | [0.006] | [0.006] |
| americas | -0.075*** | -0.070*** | -0.036*** | -0.032*** | -0.083** | -0.074** |
| | [0.019] | [0.018] | [0.007] | [0.007] | [0.036] | [0.034] |

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Table 11 – Continued

| **Variable** | **Montreal** | | **Toronto** | | **Vancouver** | |
|---|---|---|---|---|---|---|
| weurope | -0.033*** | -0.032*** | -0.030*** | -0.024*** | -0.067*** | -0.060*** |
| | [0.010] | [0.010] | [0.006] | [0.006] | [0.014] | [0.014] |
| oeurope | -0.137*** | -0.132*** | -0.076*** | -0.063*** | -0.126*** | -0.117*** |
| | [0.018] | [0.018] | [0.007] | [0.007] | [0.019] | [0.019] |
| africa | -0.202*** | -0.188*** | -0.041** | -0.036** | -0.059* | -0.051 |
| | [0.022] | [0.022] | [0.016] | [0.016] | [0.034] | [0.032] |
| mideast | -0.102*** | -0.094*** | -0.070*** | -0.064*** | -0.127*** | -0.113** |
| | [0.019] | [0.018] | [0.017] | [0.016] | [0.049] | [0.047] |
| asiapacific | -0.085*** | -0.084*** | -0.064*** | -0.058*** | -0.137*** | -0.124*** |
| | [0.020] | [0.020] | [0.007] | [0.007] | [0.014] | [0.014] |
| exposure | -0.058 | | -0.029 | | -0.029 | |
| | [0.057] | | [0.018] | | [0.026] | |
| interacte | -10.809 | | 27.514** | | 35.832 | |
| | [36.662] | | [13.669] | | [21.943] | |
| relative | | -0.001** | | -0.001*** | | -0.002*** |
| | | [0.000] | | [0.000] | | [0.001] |
| interactr | | 0.136 | | 0.339* | | 1.157** |
| | | [0.234] | | [0.203] | | [0.489] |
| Observations | 118,556 | 118,556 | 145,401 | 145,401 | 64,200 | 64,200 |

Marginal effects reported. Observations clustered by ethnic group in census tract, robust standard errors in brackets. * significant at 10%; ** significant at 5% ; *** significant at 1%

### 5.5 Female Employment Patterns

The results for the female probit regressions examining the likelihood of being employed if in the labour force are given in Tables 12 and 13. As with the male subsample, the results are not quite as robust as for the earnings regressions, but do provide some interesting results. As with the earnings regressions, many of the control variable coefficients provide the expected sign and general magnitude which were expected, though more are statistically insignificant in this series of regressions.

Many of the ethnicity and demographic variables have similar results to the male probit regressions, and interestingly the marriage dichotomous variables suggest that it is married women who are more apt to be employed. This is an interesting result given the traditional view that single, separated, and divorced women were more likely to be employed. The coefficients for the age structure a woman's children are exactly as one would expect. The younger a womans children the less likely it is that she is employed. This likely reflects the fact that she is less flexible with the amount of time she can dedicate to work.

The ethnic enclave variables provide conflicting results. The coefficients for the exposure index are positive and marginally significant, while the coefficients associated with the relative cluster index are very small, negative, and statistically significant. Similarly the interaction terms between the enclave variables and years since migration are either statistically insignificant or very small, positive, and statistically significant. Ultimately it is not clear whether or not residing in an ethnic enclave is beneficial in finding work for an immigrant, though it would appear that with each additional year spent in the enclave, the likelihood of finding work, all else equal, is marginally improved.

When the pooled sample is divided between the three CMAs, the previous results are largely unchanged. We still observe the expected and significant coefficients associated with the age structure of a womans children, however the enclave variables still provide conflicting results. The exposure index variable and its associated interaction term are insignificant for both Montreal and Toronto, while for Vancouver they are significant and suggest that enclaves do help immigrants gain employment, but with time they have a small negative impact on finding work. The relative cluster

index is only significant for Toronto, and there it suggests a small, negative impact on gaining employment. Ultimately neither of the two measures seem to adequately help predict employment for immigrants.

Table 12: Female Employment Patterns

| **Variable** | **Pooled Sample** | | **Foreign-born** | | **Native-born** |
|---|---|---|---|---|---|
| age | 0.002*** | 0.002*** | 0.002 | 0.002 | 0.001* |
| | [0.001] | [0.001] | [0.002] | [0.002] | [0.001] |
| age2 | -0.002*** | -0.002*** | -0.003 | -0.003 | -0.001 |
| | [0.001] | [0.001] | [0.002] | [0.002] | [0.001] |
| ysm | 0.006*** | 0.006*** | 0.010*** | 0.010*** | |
| | [0.000] | [0.000] | [0.001] | [0.001] | |
| ysm2 | -0.015*** | -0.015*** | -0.023*** | -0.022*** | |
| | [0.001] | [0.001] | [0.002] | [0.002] | |
| ed | 0.004*** | 0.004*** | 0.003*** | 0.003*** | 0.004*** |
| | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| freonly | 0.001 | 0.001 | 0.001 | 0.004 | -0.005* |
| | [0.003] | [0.003] | [0.007] | [0.007] | [0.003] |
| engfre | 0.007*** | 0.007*** | 0.017*** | 0.017*** | -0.001 |
| | [0.002] | [0.002] | [0.004] | [0.004] | [0.002] |
| noengfre | -0.009** | -0.008** | -0.017*** | -0.016*** | -0.033 |
| | [0.004] | [0.004] | [0.006] | [0.006] | [0.043] |
| chinese | -0.008** | -0.008** | -0.003 | -0.005 | -0.001 |
| | [0.004] | [0.004] | [0.010] | [0.010] | [0.005] |
| sasian | -0.021*** | -0.020*** | -0.020* | -0.020* | -0.015** |
| | [0.004] | [0.004] | [0.011] | [0.011] | [0.007] |
| black | -0.034*** | -0.033*** | -0.024** | -0.024** | -0.031*** |
| | [0.005] | [0.005] | [0.012] | [0.012] | [0.006] |
| filipino | 0.022*** | 0.021*** | 0.041*** | 0.039*** | -0.01 |
| | [0.003] | [0.003] | [0.007] | [0.008] | [0.013] |
| latin | -0.057*** | -0.059*** | -0.055*** | -0.059*** | -0.03 |
| | [0.012] | [0.012] | [0.019] | [0.020] | [0.023] |
| westarab | -0.050*** | -0.050*** | -0.055*** | -0.056*** | -0.061** |
| | [0.009] | [0.009] | [0.012] | [0.012] | [0.028] |
| asian | -0.010** | -0.013*** | -0.004 | -0.009 | -0.015* |
| | [0.005] | [0.005] | [0.011] | [0.011] | [0.009] |
| othvis | -0.009 | -0.010* | -0.006 | -0.008 | -0.004 |
| | [0.006] | [0.006] | [0.011] | [0.012] | [0.012] |
| abor | -0.073*** | -0.073*** | -0.01 | -0.013 | -0.061*** |
| | [0.008] | [0.008] | [0.075] | [0.077] | [0.007] |
| mtl | -0.025*** | -0.025*** | -0.072*** | -0.073*** | -0.011*** |
| | [0.002] | [0.002] | [0.006] | [0.006] | [0.002] |
| van | -0.011*** | -0.010*** | -0.014*** | -0.014*** | -0.008*** |
| | [0.001] | [0.001] | [0.003] | [0.003] | [0.002] |
| single | -0.038*** | -0.037*** | -0.032*** | -0.031*** | -0.035*** |
| | [0.002] | [0.002] | [0.005] | [0.005] | [0.002] |

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Table 12 – Continued

| Variable | Pooled Sample | | Foreign-born | | Native-born |
|---|---|---|---|---|---|
| unmarried | -0.033*** | -0.033*** | -0.037*** | -0.036*** | -0.030*** |
| | [0.002] | [0.002] | [0.005] | [0.005] | [0.002] |
| infants | -0.055*** | -0.055*** | -0.058*** | -0.058*** | -0.056*** |
| | [0.003] | [0.003] | [0.006] | [0.006] | [0.004] |
| young | -0.013*** | -0.013*** | -0.032*** | -0.031*** | -0.007*** |
| | [0.002] | [0.002] | [0.005] | [0.005] | [0.002] |
| schchild | -0.008*** | -0.007*** | -0.019*** | -0.019*** | -0.003** |
| | [0.002] | [0.002] | [0.004] | [0.004] | [0.002] |
| oldchild | 0.005*** | 0.005*** | -0.002 | -0.001 | 0.009*** |
| | [0.002] | [0.002] | [0.004] | [0.004] | [0.002] |
| imhusband | -0.009*** | -0.008*** | -0.001 | 0 | |
| | [0.002] | [0.002] | [0.003] | [0.003] | |
| americas | -0.083*** | -0.070*** | -0.040** | -0.038** | |
| | [0.008] | [0.008] | [0.016] | [0.015] | |
| weurope | -0.071*** | -0.059*** | -0.018* | -0.016 | |
| | [0.006] | [0.006] | [0.011] | [0.010] | |
| oeurope | -0.157*** | -0.139*** | -0.075*** | -0.072*** | |
| | [0.009] | [0.008] | [0.014] | [0.014] | |
| africa | -0.136*** | -0.119*** | -0.049*** | -0.047*** | |
| | [0.014] | [0.014] | [0.016] | [0.016] | |
| mideast | -0.146*** | -0.128*** | -0.073*** | -0.068*** | |
| | [0.015] | [0.014] | [0.018] | [0.017] | |
| asiapacific | -0.120*** | -0.103*** | -0.062*** | -0.058*** | |
| | [0.008] | [0.007] | [0.012] | [0.012] | |
| exposure | 0.027* | | 0.048** | | |
| | [0.016] | | [0.021] | | |
| interacte | 4.915 | | -15.386 | | |
| | [12.801] | | [16.711] | | |
| relative | | -0.001*** | | -0.001*** | |
| | | [0.000] | | [0.000] | |
| interactr | | 0.519*** | | 0.483** | |
| | | [0.174] | | [0.227] | |

Marginal effects reported. Observations clustered by ethnic group in census tract, robust standard errors in brackets. * significant at 10%; ** significant at 5% ; *** significant at 1%

Table 13: Female Employment Patterns by CMA

| **Variable** | **Montreal** | | **Toronto** | | **Vancouver** | |
|---|---|---|---|---|---|---|
| age | 0.001 | 0.001 | 0.002*** | 0.002** | 0.002* | 0.002 |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] |
| age2 | -0.001 | -0.001 | -0.003** | -0.003** | -0.003 | -0.002 |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.002] | [0.002] |
| ysm | 0.004*** | 0.005*** | 0.006*** | 0.006*** | 0.007*** | 0.007*** |
| | [0.001] | [0.001] | [0.000] | [0.000] | [0.001] | [0.001] |
| ysm2 | -0.007*** | -0.011*** | -0.016*** | -0.015*** | -0.015*** | -0.016*** |
| | [0.003] | [0.003] | [0.001] | [0.001] | [0.003] | [0.003] |
| ed | 0.005*** | 0.005*** | 0.003*** | 0.003*** | 0.003*** | 0.003*** |
| | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| freonly | 0.026*** | 0.026*** | -0.018 | -0.02 | -0.131 | -0.134 |
| | [0.004] | [0.004] | [0.034] | [0.034] | [0.087] | [0.087] |
| engfre | 0.036*** | 0.035*** | -0.001 | -0.002 | -0.009** | -0.009** |
| | [0.005] | [0.004] | [0.002] | [0.002] | [0.004] | [0.004] |
| noengfre | 0.016* | 0.016* | -0.007 | -0.006 | -0.025*** | -0.023*** |
| | [0.009] | [0.009] | [0.005] | [0.005] | [0.008] | [0.008] |
| chinese | -0.012 | -0.011 | -0.011** | -0.011** | -0.002 | -0.002 |
| | [0.014] | [0.014] | [0.005] | [0.005] | [0.006] | [0.006] |
| sasian | -0.055*** | -0.053*** | -0.025*** | -0.024*** | 0.000 | 0.002 |
| | [0.020] | [0.020] | [0.005] | [0.005] | [0.006] | [0.006] |
| black | -0.033*** | -0.032*** | -0.026*** | -0.026*** | -0.063*** | -0.063*** |
| | [0.011] | [0.011] | [0.005] | [0.005] | [0.024] | [0.024] |
| filipino | 0.026*** | 0.025** | 0.018*** | 0.017*** | 0.032*** | 0.030*** |
| | [0.010] | [0.010] | [0.004] | [0.004] | [0.005] | [0.005] |
| latin | -0.057** | -0.055** | -0.039** | -0.039** | -0.070* | -0.071* |
| | [0.022] | [0.022] | [0.016] | [0.016] | [0.038] | [0.038] |
| westarab | -0.062*** | -0.060*** | -0.014 | -0.014 | -0.096* | -0.092* |
| | [0.015] | [0.015] | [0.011] | [0.011] | [0.050] | [0.050] |
| asian | -0.016 | -0.016 | -0.013** | -0.015** | -0.004 | -0.007 |
| | [0.017] | [0.017] | [0.006] | [0.007] | [0.008] | [0.008] |
| othvis | -0.043* | -0.042* | -0.010 | -0.011 | -0.003 | -0.005 |
| | [0.023] | [0.023] | [0.006] | [0.006] | [0.017] | [0.018] |
| abor | -0.076*** | -0.076*** | -0.051*** | -0.051*** | -0.083*** | -0.084*** |
| | [0.020] | [0.020] | [0.013] | [0.013] | [0.012] | [0.012] |
| single | -0.044*** | -0.044*** | -0.029*** | -0.029*** | -0.042*** | -0.040*** |
| | [0.003] | [0.003] | [0.003] | [0.003] | [0.004] | [0.004] |
| unmarried | -0.039*** | -0.039*** | -0.025*** | -0.025*** | -0.038*** | -0.037*** |
| | [0.003] | [0.003] | [0.003] | [0.003] | [0.004] | [0.004] |
| infants | -0.027*** | -0.027*** | -0.074*** | -0.075*** | -0.054*** | -0.053*** |
| | [0.005] | [0.005] | [0.005] | [0.005] | [0.007] | [0.007] |

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Table 13 – Continued

| **Variable** | **Montreal** | | **Toronto** | | **Vancouver** | |
|---|---|---|---|---|---|---|
| young | -0.012*** | -0.012*** | -0.017*** | -0.016*** | -0.010** | -0.010** |
| | [0.003] | [0.003] | [0.003] | [0.003] | [0.005] | [0.005] |
| schchild | -0.004* | -0.005* | -0.009*** | -0.009*** | -0.012*** | -0.012*** |
| | [0.003] | [0.003] | [0.002] | [0.002] | [0.004] | [0.004] |
| oldchild | 0.010*** | 0.010*** | 0.002 | 0.002 | 0.000 | 0.001 |
| | [0.002] | [0.002] | [0.002] | [0.002] | [0.004] | [0.004] |
| americas | -0.071*** | -0.002 | -0.068*** | -0.056*** | -0.112*** | -0.101*** |
| | [0.019] | [0.016] | [0.009] | [0.008] | [0.039] | [0.038] |
| weurope | -0.048*** | 0.011 | -0.062*** | -0.049*** | -0.081*** | -0.070*** |
| | [0.011] | [0.012] | [0.008] | [0.008] | [0.014] | [0.014] |
| oeurope | -0.165*** | -0.056** | -0.134*** | -0.110*** | -0.185*** | -0.175*** |
| | [0.021] | [0.024] | [0.010] | [0.009] | [0.022] | [0.022] |
| africa | -0.137*** | -0.034 | -0.068*** | -0.058*** | -0.086*** | -0.078** |
| | [0.023] | [0.022] | [0.024] | [0.022] | [0.032] | [0.032] |
| mideast | -0.101*** | -0.017 | -0.173*** | -0.154*** | -0.111** | -0.102* |
| | [0.022] | [0.019] | [0.024] | [0.023] | [0.055] | [0.054] |
| asiapacific | -0.072*** | -0.003 | -0.103*** | -0.087*** | -0.132*** | -0.117*** |
| | [0.023] | [0.018] | [0.009] | [0.009] | [0.014] | [0.013] |
| imhusband | -0.012*** | -0.011** | -0.004 | -0.003 | -0.008* | -0.008** |
| | [0.005] | [0.005] | [0.002] | [0.002] | [0.004] | [0.004] |
| exposure | -0.048 | | 0.005 | | 0.056** | |
| | [0.074] | | [0.021] | | [0.026] | |
| interacte | -33.027 | -36.111 | 24.565 | | -22.377 | |
| | [40.733] | [26.825] | [16.447] | | [24.321] | |
| relative | | 0.000 | | -0.001*** | | -0.001 |
| | | [0.000] | | [0.000] | | [0.001] |
| interactr | | 0.064 | | 1.096*** | | 0.547 |
| | | [0.322] | | [0.243] | | [0.467] |
| Observations | 110,056 | 110,056 | 136,614 | 136,614 | 60,035 | 60,035 |

Marginal effects reported. Observations clustered by ethnic group in census tract, robust standard errors in brackets. * significant at 10%; ** significant at 5% ; *** significant at 1%

### 5.6 Male Labour Force Participation

In addition to the probit regressions using employment as the dependent variable, probit regressions using labour force participation were also considered. This series of regressions included all those who fit the general sample criteria and includes both those who are in the labour force those who are not.

Tables 14 and 15 provide the probit results for the male subsample. The pooled, foreign-born only, and native-born regressions provide some surprising initial results. For the foreign-born, ethnicity and place of birth do not have a significant impact upon the probability of participating in the labour force, while for the native born ethnicity does. Also, as before we see that those residing in Toronto are more likely to be in the labour force.

With regard to the ethnic enclave variables, the results are similar to the previous probit regressions. The exposure index and associated interaction term coefficients are not significant, while the relative cluster index coefficients are significant, but very small in magnitude. This would seem to suggest that residence in an ethnic enclave does not appear to affect the probability that an immigrant will be in the labour force.

When the pooled-sample is divided between the three CMAs, the ethnic enclave variables do provide clearer results. In the case of Montreal, all the ethnic enclave coefficients are statistically insignificant and small in magnitude. For Toronto, however, there are statistically significant results for both measures. Both measures suggest a negative relationship between the probability of in the labour force and living in an ethnic enclave. The coefficient for the interaction term between the exposure index and years since maturity suggests that there is a positive relationship between residing in an ethnic enclave for a longer period of time and labour force participation, however, the magnitude of this effect on the probability of being in the labour force is quite small. The other interaction term does not provide significant results. For Vancouver, the exposure index and relative cluster index offer conflicting results. While both are statistically significant, the exposure index coefficient suggests a positive relationship and the relative cluster index coefficient suggests a negative relationship. Ultimately, these results suggest that labour force participation is pretty well independent of residence in an ethnically concentrated area, which is not a surprising finding

as the desire or willingness to work is typically motivated by financial necessity.

Table 14: Male Labour Force Participation

| **Variable** | **Pooled Sample** | | **Foreign-born** | | **Native-Born** |
|---|---|---|---|---|---|
| age | 0.009*** | 0.009*** | 0.013*** | 0.012*** | 0.008*** |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] |
| age2 | -0.014*** | -0.014*** | -0.019*** | -0.019*** | -0.013*** |
| | [0.001] | [0.001] | [0.002] | [0.002] | [0.001] |
| ysm | 0.005*** | 0.005*** | 0.007*** | 0.006*** | |
| | [0.000] | [0.000] | [0.000] | [0.000] | |
| ysm2 | -0.012*** | -0.012*** | -0.015*** | -0.014*** | |
| | [0.001] | [0.001] | [0.001] | [0.001] | |
| ed | 0.007*** | 0.007*** | 0.006*** | 0.005*** | 0.008*** |
| | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| freonly | -0.002 | -0.001 | -0.002 | 0.001 | -0.005* |
| | [0.003] | [0.003] | [0.007] | [0.007] | [0.003] |
| engfre | 0.016*** | 0.016*** | 0.024*** | 0.025*** | 0.008*** |
| | [0.002] | [0.002] | [0.004] | [0.004] | [0.002] |
| noengfre | -0.019*** | -0.017*** | -0.032*** | -0.031*** | -0.125*** |
| | [0.004] | [0.004] | [0.005] | [0.005] | [0.041] |
| chinese | -0.050*** | -0.051*** | -0.049*** | -0.052*** | -0.031*** |
| | [0.005] | [0.005] | [0.013] | [0.014] | [0.006] |
| sasian | -0.006 | -0.005 | 0.003 | 0.002 | -0.034*** |
| | [0.004] | [0.004] | [0.011] | [0.011] | [0.009] |
| black | -0.014*** | -0.013*** | 0.008 | 0.009 | -0.018*** |
| | [0.005] | [0.005] | [0.011] | [0.011] | [0.005] |
| filipino | -0.015** | -0.017*** | -0.006 | -0.011 | -0.033** |
| | [0.006] | [0.006] | [0.013] | [0.013] | [0.016] |
| latin | -0.012 | -0.013 | 0.011 | 0.009 | -0.040* |
| | [0.009] | [0.009] | [0.013] | [0.014] | [0.023] |
| westarab | -0.020*** | -0.021*** | -0.014* | -0.017* | -0.060*** |
| | [0.007] | [0.007] | [0.008] | [0.008] | [0.023] |
| asian | -0.024*** | -0.025*** | -0.028** | -0.032** | -0.008 |
| | [0.005] | [0.005] | [0.014] | [0.015] | [0.008] |
| othvis | -0.015** | -0.016** | -0.005 | -0.008 | -0.008 |
| | [0.007] | [0.007] | [0.012] | [0.012] | [0.013] |
| abor | -0.061*** | -0.061*** | -0.022 | -0.024 | -0.053*** |
| | [0.007] | [0.007] | [0.080] | [0.081] | [0.007] |
| mtl | -0.017*** | -0.017*** | -0.046*** | -0.046*** | -0.005* |
| | [0.002] | [0.002] | [0.005] | [0.005] | [0.003] |
| van | -0.014*** | -0.014*** | -0.026*** | -0.026*** | -0.007*** |
| | [0.002] | [0.002] | [0.003] | [0.003] | [0.002] |
| single | -0.100*** | -0.100*** | -0.084*** | -0.084*** | -0.096*** |
| | [0.002] | [0.002] | [0.004] | [0.004] | [0.002] |

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Table 14 – Continued

| **Variable** | **Pooled Sample** | | **Foreign-born** | | **Native-born** |
|---|---|---|---|---|---|
| unmarried | -0.057*** | -0.058*** | -0.058*** | -0.059*** | -0.057*** |
| | [0.003] | [0.003] | [0.005] | [0.005] | [0.003] |
| americas | -0.048*** | -0.039*** | -0.021 | -0.017 | |
| | [0.007] | [0.007] | [0.015] | [0.015] | |
| weurope | -0.045*** | -0.036*** | | | |
| | [0.005] | [0.005] | | | |
| oeurope | -0.068*** | -0.057*** | -0.008 | -0.005 | |
| | [0.006] | [0.006] | [0.010] | [0.010] | |
| africa | -0.090*** | -0.076*** | -0.021 | -0.015 | |
| | [0.011] | [0.011] | [0.013] | [0.013] | |
| mideast | -0.094*** | -0.079*** | -0.034** | -0.027** | |
| | [0.012] | [0.011] | [0.014] | [0.013] | |
| asiapacific | -0.074*** | -0.064*** | -0.025* | -0.02 | |
| | [0.006] | [0.006] | [0.013] | [0.013] | |
| exposure | 0.000 | | 0.007 | | |
| | [0.020] | | [0.024] | | |
| interacte | 8.14 | | -7.57 | | |
| | [11.506] | | [13.788] | | |
| relative | | -0.001*** | | -0.001*** | |
| | | [0.000] | | [0.000] | |
| interactr | | 0.249 | | 0.057 | |
| | | [0.159] | | [0.190] | |

Marginal effects reported. Observations clustered by ethnic group in census tract, robust standard errors in brackets. * significant at 10%; ** significant at 5% ; *** significant at 1%

Table 15: Male Labour Force Participation by CMA

| **Variable** | **Montreal** | | **Toronto** | | **Vancouver** | |
|---|---|---|---|---|---|---|
| age | 0.011*** | 0.011*** | 0.006*** | 0.006*** | 0.012*** | 0.011*** |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] |
| age2 | -0.016*** | -0.016*** | -0.010*** | -0.011*** | -0.018*** | -0.018*** |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.002] | [0.002] |
| ysm | 0.006*** | 0.006*** | 0.004*** | 0.004*** | 0.008*** | 0.007*** |
| | [0.001] | [0.001] | [0.000] | [0.000] | [0.001] | [0.001] |
| ysm2 | -0.012*** | -0.012*** | -0.010*** | -0.010*** | -0.016*** | -0.016*** |
| | [0.003] | [0.003] | [0.001] | [0.001] | [0.003] | [0.003] |
| ed | 0.008*** | 0.008*** | 0.006*** | 0.006*** | 0.007*** | 0.007*** |
| | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| freonly | 0.026*** | 0.026*** | -0.066 | -0.064 | -0.192 | -0.197 |
| | [0.003] | [0.003] | [0.057] | [0.056] | [0.125] | [0.126] |
| engfre | 0.049*** | 0.049*** | 0.001 | 0.001 | -0.004 | -0.005 |
| | [0.004] | [0.004] | [0.003] | [0.003] | [0.005] | [0.005] |
| noengfre | -0.004 | -0.004 | -0.015*** | -0.015*** | -0.030*** | -0.025*** |
| | [0.012] | [0.012] | [0.006] | [0.006] | [0.008] | [0.008] |
| chinese | -0.041*** | -0.042*** | -0.050*** | -0.052*** | -0.047*** | -0.046*** |
| | [0.014] | [0.014] | [0.007] | [0.007] | [0.008] | [0.008] |
| sasian | -0.010 | -0.010 | -0.020*** | -0.019*** | 0.013** | 0.019*** |
| | [0.012] | [0.012] | [0.006] | [0.006] | [0.007] | [0.007] |
| black | -0.01 | -0.01 | -0.015*** | -0.015*** | -0.016 | -0.015 |
| | [0.009] | [0.009] | [0.006] | [0.006] | [0.019] | [0.019] |
| filipino | 0.021* | 0.022* | -0.041*** | -0.041*** | 0.020** | 0.011 |
| | [0.013] | [0.012] | [0.009] | [0.009] | [0.009] | [0.010] |
| latin | 0.000 | -0.001 | -0.024* | -0.022 | -0.002 | -0.003 |
| | [0.015] | [0.015] | [0.014] | [0.014] | [0.027] | [0.027] |
| westarab | -0.01 | -0.011 | -0.019 | -0.018 | -0.047 | -0.047 |
| | [0.009] | [0.009] | [0.013] | [0.013] | [0.030] | [0.031] |
| asian | -0.017 | -0.018 | -0.044*** | -0.042*** | 0.001 | -0.007 |
| | [0.014] | [0.014] | [0.009] | [0.008] | [0.008] | [0.008] |
| othvis | 0.008 | 0.008 | -0.026*** | -0.025*** | -0.012 | -0.019 |
| | [0.016] | [0.016] | [0.009] | [0.008] | [0.019] | [0.020] |
| abor | -0.024* | -0.024* | -0.042*** | -0.042*** | -0.095*** | -0.095*** |
| | [0.014] | [0.014] | [0.012] | [0.012] | [0.012] | [0.012] |
| single | -0.104*** | -0.104*** | -0.089*** | -0.089*** | -0.110*** | -0.111*** |
| | [0.003] | [0.003] | [0.003] | [0.003] | [0.005] | [0.005] |
| unmarried | -0.054*** | -0.054*** | -0.056*** | -0.056*** | -0.067*** | -0.068*** |
| | [0.004] | [0.004] | [0.004] | [0.004] | [0.006] | [0.006] |
| americas | -0.077*** | -0.069*** | -0.008 | -0.009 | -0.086** | -0.061* |
| | [0.020] | [0.020] | [0.007] | [0.007] | [0.037] | [0.034] |

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Table 15 – Continued

| **Variable** | **Montreal** | | **Toronto** | | **Vancouver** | |
|---|---|---|---|---|---|---|
| weurope | -0.048*** | -0.044*** | -0.015*** | -0.015*** | -0.071*** | -0.044*** |
| | [0.012] | [0.011] | [0.006] | [0.006] | [0.014] | [0.013] |
| oeurope | -0.107*** | -0.102*** | -0.033*** | -0.028*** | -0.077*** | -0.057*** |
| | [0.017] | [0.017] | [0.006] | [0.006] | [0.017] | [0.016] |
| africa | -0.139*** | -0.129*** | -0.016 | -0.014 | -0.082*** | -0.060** |
| | [0.021] | [0.021] | [0.014] | [0.014] | [0.027] | [0.025] |
| mideast | -0.126*** | -0.114*** | -0.054*** | -0.053*** | -0.088** | -0.051 |
| | [0.023] | [0.022] | [0.016] | [0.016] | [0.038] | [0.034] |
| asiapacific | -0.087*** | -0.081*** | -0.022*** | -0.025*** | -0.154*** | -0.107*** |
| | [0.020] | [0.020] | [0.006] | [0.006] | [0.014] | [0.013] |
| exposure | 0.04 | | -0.090*** | | 0.105*** | |
| | [0.070] | | [0.023] | | [0.037] | |
| interacte | -42.092 | | 32.138** | | 13.375 | |
| | [40.247] | | [13.857] | | [28.622] | |
| relative | | 0.000 | | -0.001*** | | -0.003*** |
| | | [0.000] | | [0.000] | | [0.001] |
| interactr | | 0.064 | | -0.071 | | 1.983*** |
| | | [0.257] | | [0.203] | | [0.573] |
| Observations | 129,672 | 129,672 | 157,606 | 157,606 | 71,524 | 71,524 |

Marginal effects reported. Observations clustered by ethnic group in census tract, robust standard errors in brackets. * significant at 10%; ** significant at 5% ; *** significant at 1%

## 5.7 Female Labour Force Participation

Tables 16 and 17 provide the regression results for the female labour force participation probit regressions. As was the case with male subsample, these regressions provide similarly inconclusive results. Many of the socioeconomic variables have coefficients with the expected sign and magnitude, though there are some surprising results. For the female employment probit it was observed that married women were more likely to be employed relative to single, separated, divorced, and widowed women. However, the present results suggest that it is separated, divorced, and widowed women who are relatively more likely to be in the labour force.

The ethnic enclave variables provide mixed results in the pooled and immigrant-only probit regressions. In the pooled regression, the exposure index and corresponding interaction term are not significant, while the relative cluster index and its associated interaction term are, though the magnitude of the coefficients is small. In the immigrants-only regression, all the enclave variables have statistically significant coefficients, though the exposure index has a larger positive coefficient, while the relative cluster index coefficient is small and negative.

When the pooled sample is divided into groups by CMA, the results are similar to those of the pooled sample. We observe that the exposure index coefficients are insignificant and that some of the relative cluster index coefficients are significant, though practically zero in magnitude. Taken together these results are generally inconclusive and seem to suggest that relative to the native-born, residence in an ethnically concentrated immigrant community has little effect on an immigrant womans desire or willingness to work in the labour market.

Table 16: Female Labour Force Participation

| **Variable** | **Pooled Sample** | | **Foreign-born** | | **Native-Born** |
|---|---|---|---|---|---|
| age | 0.018*** | 0.018*** | 0.021*** | 0.020*** | 0.016*** |
| | [0.001] | [0.001] | [0.002] | [0.002] | [0.001] |
| age2 | -0.029*** | -0.029*** | -0.034*** | -0.033*** | -0.025*** |
| | [0.001] | [0.001] | [0.003] | [0.003] | [0.001] |
| ysm | 0.012*** | 0.012*** | 0.018*** | 0.017*** | |
| | [0.001] | [0.001] | [0.001] | [0.001] | |
| ysm2 | -0.027*** | -0.028*** | -0.039*** | -0.039*** | |
| | [0.002] | [0.002] | [0.002] | [0.002] | |
| ed | 0.017*** | 0.017*** | 0.014*** | 0.014*** | 0.020*** |
| | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| freonly | -0.006 | -0.005 | -0.014 | -0.009 | -0.015*** |
| | [0.004] | [0.004] | [0.010] | [0.010] | [0.004] |
| engfre | 0.041*** | 0.041*** | 0.064*** | 0.064*** | 0.022*** |
| | [0.003] | [0.003] | [0.006] | [0.006] | [0.003] |
| noengfre | -0.035*** | -0.032*** | -0.063*** | -0.060*** | -0.226*** |
| | [0.006] | [0.006] | [0.007] | [0.007] | [0.061] |
| chinese | -0.042*** | -0.042*** | -0.013 | -0.017 | -0.017* |
| | [0.006] | [0.006] | [0.014] | [0.014] | [0.009] |
| sasian | -0.015** | -0.014** | 0.014 | 0.012 | -0.049*** |
| | [0.006] | [0.006] | [0.013] | [0.013] | [0.013] |
| black | 0.011* | 0.013** | 0.073*** | 0.073*** | -0.009 |
| | [0.006] | [0.006] | [0.012] | [0.012] | [0.008] |
| filipino | 0.072*** | 0.069*** | 0.120*** | 0.114*** | 0.008 |
| | [0.005] | [0.005] | [0.010] | [0.011] | [0.021] |
| latin | -0.056*** | -0.059*** | -0.008 | -0.014 | -0.038 |
| | [0.015] | [0.015] | [0.019] | [0.020] | [0.033] |
| westarab | -0.045*** | -0.046*** | -0.024** | -0.030** | -0.136*** |
| | [0.011] | [0.011] | [0.012] | [0.012] | [0.038] |
| asian | -0.021*** | -0.026*** | 0.005 | -0.004 | -0.009 |
| | [0.008] | [0.008] | [0.015] | [0.015] | [0.012] |
| othvis | -0.015 | -0.017* | 0.025* | 0.02 | -0.037 |
| | [0.009] | [0.009] | [0.014] | [0.014] | [0.024] |
| abor | -0.114*** | -0.114*** | -0.144 | -0.147 | -0.099*** |
| | [0.010] | [0.010] | [0.109] | [0.108] | [0.009] |
| mtl | -0.029*** | -0.030*** | -0.077*** | -0.078*** | -0.006 |
| | [0.003] | [0.003] | [0.007] | [0.007] | [0.004] |
| van | -0.009*** | -0.009*** | -0.025*** | -0.025*** | 0.002 |
| | [0.002] | [0.002] | [0.005] | [0.005] | [0.003] |
| single | -0.025*** | -0.025*** | 0.012* | 0.013** | -0.032*** |
| | [0.002] | [0.002] | [0.006] | [0.006] | [0.002] |

Continued on following page.

Table 16 – Continued

| Variable | Pooled Sample | | Foreign-born | | Native-born |
|---|---|---|---|---|---|
| unmarried | 0.012*** | 0.013*** | 0.021*** | 0.023*** | 0.012*** |
| | [0.002] | [0.002] | [0.005] | [0.005] | [0.002] |
| infants | -0.254*** | -0.254*** | -0.256*** | -0.256*** | -0.252*** |
| | [0.004] | [0.004] | [0.008] | [0.008] | [0.005] |
| young | -0.157*** | -0.156*** | -0.155*** | -0.155*** | -0.156*** |
| | [0.003] | [0.003] | [0.006] | [0.006] | [0.004] |
| schchild | -0.048*** | -0.048*** | -0.046*** | -0.046*** | -0.048*** |
| | [0.002] | [0.002] | [0.005] | [0.005] | [0.003] |
| oldchild | 0.003 | 0.003 | -0.012** | -0.011** | 0.012*** |
| | [0.002] | [0.002] | [0.005] | [0.005] | [0.002] |
| americas | -0.061*** | -0.045*** | 0.026 | 0.031** | |
| | [0.009] | [0.009] | [0.016] | [0.016] | |
| weurope | -0.142*** | -0.123*** | | | |
| | [0.008] | [0.007] | | | |
| oeurope | -0.145*** | -0.126*** | 0.025** | 0.028** | |
| | [0.008] | [0.008] | [0.011] | [0.011] | |
| africa | -0.183*** | -0.161*** | -0.01 | -0.003 | |
| | [0.014] | [0.014] | [0.015] | [0.015] | |
| mideast | -0.254*** | -0.229*** | -0.090*** | -0.079*** | |
| | [0.015] | [0.014] | [0.017] | [0.017] | |
| asiapacific | -0.166*** | -0.146*** | -0.045*** | -0.037** | |
| | [0.009] | [0.009] | [0.016] | [0.016] | |
| imhusband | 0.004 | 0.006** | 0.018*** | 0.020*** | |
| | [0.003] | [0.003] | [0.004] | [0.004] | |
| exposure | 0.051 | | 0.125*** | | |
| | [0.034] | | [0.040] | | |
| interacte | 1.722 | | -75.174*** | | |
| | [20.640] | | [23.714] | | |
| relative | | -0.002*** | | -0.002*** | |
| | | [0.000] | | [0.001] | |
| interactr | | 0.678** | | -0.172 | |
| | | [0.264] | | [0.303] | |
| Observations | 380,280 | 380,280 | 111,752 | 111,752 | 268,528 |

Marginal effects reported. Observations clustered by ethnic group in census tract, robust standard errors in brackets. * significant at 10%; ** significant at 5% ; *** significant at 1%

Table 17: Female Labour Force Participation by CMA

| **Variable** | **Montreal** | | **Toronto** | | **Vancouver** | |
|---|---|---|---|---|---|---|
| age | 0.022*** | 0.022*** | 0.012*** | 0.012*** | 0.023*** | 0.022*** |
| | [0.002] | [0.002] | [0.001] | [0.001] | [0.002] | [0.002] |
| age2 | -0.033*** | -0.033*** | -0.021*** | -0.021*** | -0.035*** | -0.034*** |
| | [0.002] | [0.002] | [0.002] | [0.002] | [0.003] | [0.003] |
| ysm | 0.008*** | 0.007*** | 0.012*** | 0.012*** | 0.013*** | 0.012*** |
| | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] | [0.001] |
| ysm2 | -0.014*** | -0.015*** | -0.029*** | -0.029*** | -0.027*** | -0.027*** |
| | [0.004] | [0.004] | [0.002] | [0.002] | [0.004] | [0.004] |
| ed | 0.021*** | 0.021*** | 0.015*** | 0.015*** | 0.015*** | 0.015*** |
| | [0.000] | [0.000] | [0.000] | [0.000] | [0.001] | [0.001] |
| freonly | 0.061*** | 0.062*** | -0.049 | -0.049 | 0.009 | 0.007 |
| | [0.005] | [0.005] | [0.052] | [0.052] | [0.067] | [0.067] |
| engfre | 0.114*** | 0.114*** | 0.015*** | 0.015*** | 0.009 | 0.008 |
| | [0.006] | [0.006] | [0.004] | [0.004] | [0.006] | [0.006] |
| noengfre | 0.02 | 0.02 | -0.047*** | -0.045*** | -0.040*** | -0.034*** |
| | [0.014] | [0.014] | [0.008] | [0.008] | [0.011] | [0.011] |
| chinese | -0.051** | -0.052** | -0.033*** | -0.034*** | -0.034*** | -0.034*** |
| | [0.024] | [0.024] | [0.009] | [0.009] | [0.010] | [0.010] |
| sasian | -0.056** | -0.056** | -0.041*** | -0.039*** | 0.038*** | 0.046*** |
| | [0.025] | [0.025] | [0.009] | [0.009] | [0.010] | [0.010] |
| black | -0.012 | -0.011 | 0.011 | 0.011 | -0.011 | -0.011 |
| | [0.014] | [0.014] | [0.008] | [0.008] | [0.028] | [0.028] |
| filipino | 0.077*** | 0.079*** | 0.054*** | 0.051*** | 0.109*** | 0.099*** |
| | [0.016] | [0.016] | [0.007] | [0.008] | [0.008] | [0.009] |
| latin | -0.090*** | -0.093*** | -0.036* | -0.036* | -0.164*** | -0.162*** |
| | [0.029] | [0.029] | [0.019] | [0.020] | [0.059] | [0.059] |
| westarab | -0.048*** | -0.047*** | -0.054*** | -0.053*** | 0.04 | 0.043 |
| | [0.016] | [0.016] | [0.017] | [0.018] | [0.034] | [0.034] |
| asian | -0.050* | -0.051* | -0.034*** | -0.035*** | 0.004 | -0.007 |
| | [0.026] | [0.026] | [0.011] | [0.011] | [0.013] | [0.013] |
| othvis | -0.005 | -0.005 | -0.029*** | -0.029*** | 0.017 | 0.01 |
| | [0.029] | [0.029] | [0.011] | [0.011] | [0.026] | [0.027] |
| abor | -0.072*** | -0.072*** | -0.095*** | -0.095*** | -0.148*** | -0.148*** |
| | [0.020] | [0.020] | [0.016] | [0.016] | [0.015] | [0.015] |
| single | -0.035*** | -0.035*** | -0.008** | -0.008** | -0.034*** | -0.034*** |
| | [0.004] | [0.004] | [0.004] | [0.004] | [0.006] | [0.006] |
| unmarried | 0.016*** | 0.016*** | 0.019*** | 0.019*** | -0.008 | -0.007 |
| | [0.004] | [0.004] | [0.003] | [0.003] | [0.005] | [0.005] |
| infants | -0.255*** | -0.255*** | -0.251*** | -0.250*** | -0.248*** | -0.248*** |
| | [0.008] | [0.008] | [0.006] | [0.006] | [0.010] | [0.010] |

Continued on following page.

Table 17 – Continued

| Variable | Montreal | | Toronto | | Vancouver | |
|---|---|---|---|---|---|---|
| young | -0.155*** | -0.155*** | -0.151*** | -0.151*** | -0.163*** | -0.162*** |
| | [0.006] | [0.006] | [0.005] | [0.005] | [0.008] | [0.008] |
| schchild | -0.049*** | -0.049*** | -0.036*** | -0.036*** | -0.071*** | -0.071*** |
| | [0.004] | [0.004] | [0.004] | [0.004] | [0.006] | [0.006] |
| oldchild | 0.011*** | 0.011*** | 0.010*** | 0.010*** | -0.029*** | -0.029*** |
| | [0.004] | [0.004] | [0.003] | [0.003] | [0.006] | [0.006] |
| americas | -0.005 | 0.003 | -0.046*** | -0.038*** | -0.011 | 0.012 |
| | [0.019] | [0.019] | [0.011] | [0.011] | [0.039] | [0.036] |
| weurope | -0.075*** | -0.067*** | -0.144*** | -0.131*** | -0.140*** | -0.105*** |
| | [0.016] | [0.015] | [0.010] | [0.010] | [0.017] | [0.016] |
| oeurope | -0.194*** | -0.187*** | -0.120*** | -0.105*** | -0.137*** | -0.112*** |
| | [0.020] | [0.020] | [0.009] | [0.010] | [0.019] | [0.019] |
| africa | -0.209*** | -0.200*** | -0.115*** | -0.104*** | -0.091*** | -0.060* |
| | [0.023] | [0.025] | [0.023] | [0.023] | [0.033] | [0.031] |
| mideast | -0.275*** | -0.262*** | -0.207*** | -0.197*** | -0.302*** | -0.245*** |
| | [0.025] | [0.025] | [0.022] | [0.022] | [0.057] | [0.058] |
| asiapacific | -0.088*** | -0.079*** | -0.128*** | -0.120*** | -0.228*** | -0.175*** |
| | [0.028] | [0.027] | [0.011] | [0.011] | [0.016] | [0.016] |
| imhusband | 0.008 | 0.009 | 0.013*** | 0.015*** | -0.010* | -0.007 |
| | [0.007] | [0.007] | [0.004] | [0.004] | [0.006] | [0.006] |
| exposure | 0.064 | | -0.007 | | 0.075 | |
| | [0.138] | | [0.049] | | [0.056] | |
| interacte | -11.15 | | -4.279 | | 30.953 | |
| | [70.358] | | [24.992] | | [48.818] | |
| relative | | -0.001 | | -0.001*** | | -0.007*** |
| | | [0.001] | | [0.001] | | [0.001] |
| interactr | | 0.515 | | -0.238 | | 3.349*** |
| | | [0.423] | | [0.338] | | [0.891] |
| Observations | 136,183 | 136,183 | 168,198 | 168,198 | 75,899 | 75,899 |

Marginal effects reported. Observations clustered by ethnic group in census tract, robust standard errors in brackets. * significant at 10%; ** significant at 5% ; *** significant at 1%

# 6 Conclusion

In the end, a number of conclusions have been reached. As expected given the literature, we observe that residing in an immigrant enclave is significantly detrimental to immigrant earnings for both males and females at least in the short run. This has typically been explained by the fact that isolation amongst one's own ethnic group reduces exposure to Canadas official language and does not allow the same degree of learning to take place. While there is likely greater social cohesion, those living in immigrant communities are not able to learn as much about the Canadian labour force, job opportunities, and acquire the skills necessary to succeed in it as compared to those immigrants choosing to reside in less ethnically concentrated areas.

Interestingly, the results also seem to suggest that those residing in ethnically concentrated areas for longer periods of time are not more negatively affected. That is, in including an interaction term between the measure of ethnic concentration and years since migration, we generally observe very small, positive coefficients, suggesting that, though there is an initial disadvantage to residing in an enclave, this disadvantage diminishes with time. This is a surprising result, as one would expect this disadvantage to increase with time.

Lastly, in examining the effect of immigrant ethnic concentration on employment and labour force outcomes, we observe no clear significant impact. That is, residence in an enclave does not help to predict the willingness to work and the ability to find employment. This result is not necessarily surprising when one considers their own motivations for seeking and obtaining employment as such decisions are likely financially driven. We might thus conclude that, enclaves do not appear to affect the incidence or probability of employment, but rather the "quality" or type of employment which is reflected in the wages earned.

Taken together, these results have implications for Canadian immigration policy. Though there has been a decline in recent years, the three major Canadian cities still attract the majority of recent immigrants to Canada and this has led to increasingly isolated immigrant communities. The findings in this paper seem to suggest that the government should pursue policies aimed at spreading the recent immigrants out across the various CMAs and smaller cities in an effort to reduce ethnic concentration and isolation in some areas of the three major cities. Such policy changes would

likely lead to higher official language adoption rates amongst newly arrived immigrants, generate more applicable Canadian labour force experience, and allow immigrants more social interaction outside of their own ethnic group.

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# Appendix

Table 18: Variable Definitions

| | |
|---|---|
| DEPENDENT VARIABLE | |
| Log Earnings | Natural logarithm of total income by persons 15 years of age and over as wages and salaries, net income from unincorporated non-farm business and/or professional practice and net farm self -employment income. |
| Employed | 1 if respondent is employed, 0 otherwise |
| Labour Force Participant | 1 respondent is in the labour force, 0 otherwise |
| INDEPENDENT VARIABLES | |
| Demographic Variables | |
| Age | Age in years |
| Age-Squared | Age in years, squared |
| Sex | 1 if respondent is female, 0 otherwise |
| Census Metropolitan Areas (CMAs) | |
| Montreal | 1 if respondent is living in Montreal, 0 otherwise |
| Toronto | 1 if respondent is living in Toronto, 0 otherwise (Reference category) |
| Vancouver | 1 if respondent is living in Vancouver, 0 otherwise |
| Education | |
| Education | Total years of education |
| Official Language Knowledge | |
| English only | 1 if able to conduct a conversation in English, 0 otherwise (Reference category) |
| French only | 1 if able to conduct a conversation in French, 0 otherwise |
| English and French | 1 if able to conduct a conversation in English or French, 0 otherwise |
| No English or French | 1 if unable to conduct a conversation in English or French, 0 otherwise |
| Region of Birth | |
| Central or South America | 1 if born in Central or South America, 0 otherwise |
| Western, Southern, or Central Europe | 1 if born in Western, Southern, or Central Europe, 0 otherwise |
| Rest of Europe | 1 if born in Eastern Europe or the Balkans, 0 otherwise |
| Africa | 1 if born in Africa, 0 otherwise |
| Middle East | 1 if born in the Middle East or Western Asia, 0 otherwise |
| Asia-Pacific | 1 if born in Asia-Pacific, 0 otherwise |

Continued on following page.

Table 18 – Continued

| | |
|---|---|
| Population Groups | |
| White | 1 if white, 0 otherwise (Reference category) |
| Chinese | 1 if Chinese, 0 otherwise |
| South Asian | 1 if South Asian, 0 otherwise |
| Black | 1 if Black, 0 otherwise |
| Filipino | 1 if Filipino, 0 otherwise |
| Latin | 1 if Latin, 0 otherwise |
| West Asian or Arab | 1 if West Asian or Arab, 0 otherwise |
| Other Asian | 1 if other Asian group, 0 otherwise |
| Other Visible Minority | 1 if other Visible Minority, 0 otherwise |
| Aboriginal | 1 if Aboriginal, 0 otherwise |
| Labour Market Activity | |
| Full-time (FT) | 1 if employed full-time during reference year, 0 otherwise |
| Part-time (PT) | 1 if employed part-time during reference year, 0 otherwise |
| Immigrant-specific Variables | |
| Immigrant | 1 if foreign-born, 0 otherwise |
| YSM | Number of years since migration |
| YSM-squared | Number of years since migration, squared |
| Ethnic Enclave Variables | |
| Exposure Index | Percentage of population in Census Tract with same country of birth |
| Relative Cluster Index | Percentage of population in Census Tract with same country of birth total percentage of the sample made up by the immigrant country of birth group |
| InteractionE | Interaction term between the exposure index and years since migration ($\frac{EXPOSURE_i \cdot YSM_i}{10{,}000}$) |
| InteractionR | Interaction term between the relative cluster index and years since migration ($\frac{RELATIVE_i \cdot YSM_i}{10{,}000}$) |
| Marital Status | |
| Single | 1 if single (never married), 0 otherwise |
| Unmarried | 1 if separated, divorced, or widow(er), 0 otherwise |
| Family Characteristics (Female Earnings Estimations Only) | |
| infants | 1 if woman has an infant $< 2$ years of age, 0 otherwise |
| young | 1 if woman has a young child 2-5 years of age, 0 otherwise |

Continued on following page.

Table 18 – Continued

| | |
|---|---|
| schchild | 1 if woman has a school-aged child 5-12 years of age, 0 otherwise |
| oldchild | 1 if woman has a child 12 years of age or older, 0 otherwise |
| imhusband | 1 if woman's husband is also an immigrant, 0 otherwise |

Table 19: Sample Means for Weakly- and Strongly Concentrated Ethnic Enclaves by CMA

| | Immigrant Males | | Immigrant Females | |
|---|---|---|---|---|
| **Variable** | $< 0.15$ | $\geq 0.15$ | $< 0.15$ | $\geq 0.15$ |
| **Montreal** | | | | |
| Earnings ($) | 17,376.82 | 23,489.91 | 25,662.12 | 34,094.27 |
| Age (Years) | 41.96 | 41.22 | 42.18 | 41.57 |
| YSM (Years) | 13.93 | 12.92 | 14.35 | 12.82 |
| Education (Years) | 11.5 | 13.45 | 12.31 | 14.22 |
| Part-time | 0.151 | 0.193 | 0.079 | 0.082 |
| Full-time | 0.863 | 0.812 | 0.944 | 0.931 |
| N(obs) | 4,660 | 57,190 | 5,145 | 67,625 |
| **Toronto** | | | | |
| Earnings ($) | 24,233.17 | 28,854.29 | 35,625.33 | 42,820.21 |
| Age (Years) | 40.51 | 41.37 | 41.02 | 41.76 |
| YSM (Years) | 10.79 | 12.55 | 11.17 | 12.24 |
| Education (Years) | 12.41 | 13.9 | 13.03 | 14.45 |
| Part-time | 0.147 | 0.168 | 0.052 | 0.053 |
| Full-time | 0.842 | 0.829 | 0.951 | 0.954 |
| N(obs) | 42,265 | 240,070 | 46,935 | 243,155 |
| **Vancouver** | | | | |
| Earnings ($) | 20,317.08 | 25,735.14 | 28,872.57 | 38,084.45 |
| Age (Years) | 40.17 | 41.53 | 40.58 | 42.25 |
| YSM (Years) | 10.16 | 11.36 | 10.24 | 11.57 |
| Education (Years) | 12.35 | 13.99 | 13.06 | 14.58 |
| Part-time | 0.206 | 0.249 | 0.094 | 0.106 |
| Full-time | 0.782 | 0.746 | 0.91 | 0.905 |
| N(obs) | 20,180 | 83,090 | 21,785 | 79,675 |

Exposure index of 15 percent used as divide between weakly and strong-concentrated enclaves. Language variable omitted due to low cell count.

Table 20: Names and Sample Means for Key Variables in Estimation Sample by CMA

| | Males | | Females | |
|---|---|---|---|---|
| **Variable** | **Native-born** | **Foreign-born** | **Native-born** | **Foreign-born** |
| **Montreal** | | | | |
| Earnings ($) | 44,604.71 | 33,498.12 | 30,358.45 | 23,029.12 |
| Log Earnings | 10.37 | 9.98 | 9.98 | 9.60 |
| Age (Years) | 39.42 | 41.61 | 39.66 | 41.28 |
| Education (Years) | 13.93 | 14.09 | 14.02 | 13.30 |
| YSM (Years) | | 12.93 | | 13.00 |
| Part-time | 0.060 | 0.082 | 0.183 | 0.190 |
| Full-time | 0.950 | 0.932 | 0.823 | 0.815 |
| Married | 0.715 | 0.914 | 0.794 | 1.071 |
| Single | 0.309 | 0.181 | 0.266 | 0.167 |
| Unmarried | 0.083 | 0.096 | 0.153 | 0.232 |
| N(obs) | 536,695 | 72,770 | 513,940 | 61,850 |
| **Toronto** | | | | |
| Earnings ($) | 61,431.82 | 41,656.1 | 39,779.26 | 28,162.53 |
| Log Earnings | 10.63 | 10.27 | 10.23 | 9.83 |
| Age (Years) | 38.06 | 41.64 | 38.29 | 41.23 |
| Education (Years) | 14.81 | 14.21 | 14.88 | 13.66 |
| YSM (Years) | | 12.06 | | 12.26 |
| Part-time | 0.052 | 0.053 | 0.179 | 0.165 |
| Full-time | 0.953 | 0.953 | 0.823 | 0.831 |
| Married | 0.657 | 0.899 | 0.741 | 0.984 |
| Single | 0.332 | 0.135 | 0.278 | 0.151 |
| Unmarried | 0.075 | 0.066 | 0.128 | 0.148 |
| N(obs) | 483,345 | 290,095 | 459,065 | 282,330 |
| **Vancouver** | | | | |
| Earnings ($) | 50,376.67 | 36,106.37 | 33,761.78 | 24,676.41 |
| Log Earnings | 10.47 | 10.07 | 10.08 | 9.67 |
| Age (Years) | 38.92 | 41.89 | 39.1 | 41.25 |
| Education (Years) | 14.34 | 14.25 | 14.35 | 13.65 |
| YSM (Years) | | 11.29 | | 11.12 |
| Part-time | 0.081 | 0.103 | 0.251 | 0.241 |
| Full-time | 0.928 | 0.906 | 0.755 | 0.753 |
| Married | 0.646 | 0.975 | 0.732 | 1.082 |

Continued on following page.

Table 20 – Continued

| | Males | | Females | |
|---|---|---|---|---|
| **Variable** | **Native-born** | **Foreign-born** | **Native-born** | **Foreign-born** |
| Single | 0.348 | 0.144 | 0.274 | 0.163 |
| Unmarried | 0.100 | 0.066 | 0.164 | 0.151 |
| N(obs) | 242,850 | 101,465 | 223,380 | 103,270 |